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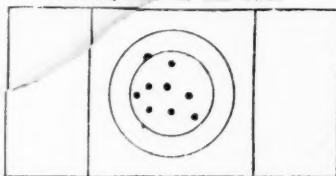
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- | | |
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(a) The names of the Vice-Presidents are given according to seniority of election.

* Nominated by the War Office.

N.B.—The Figures 1, 2, 3 indicate the year of Service on the Council.

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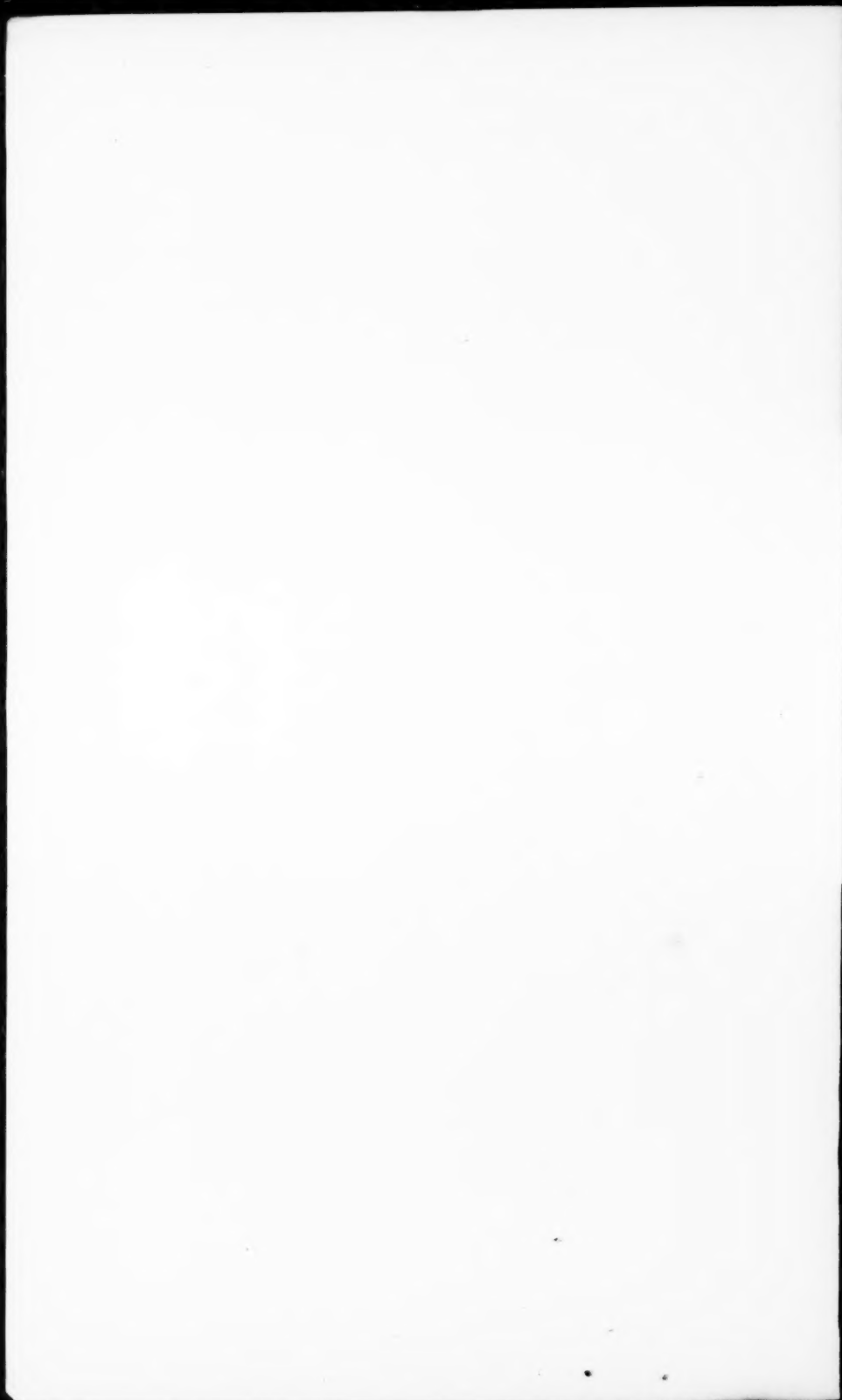
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Corrections in June Number.

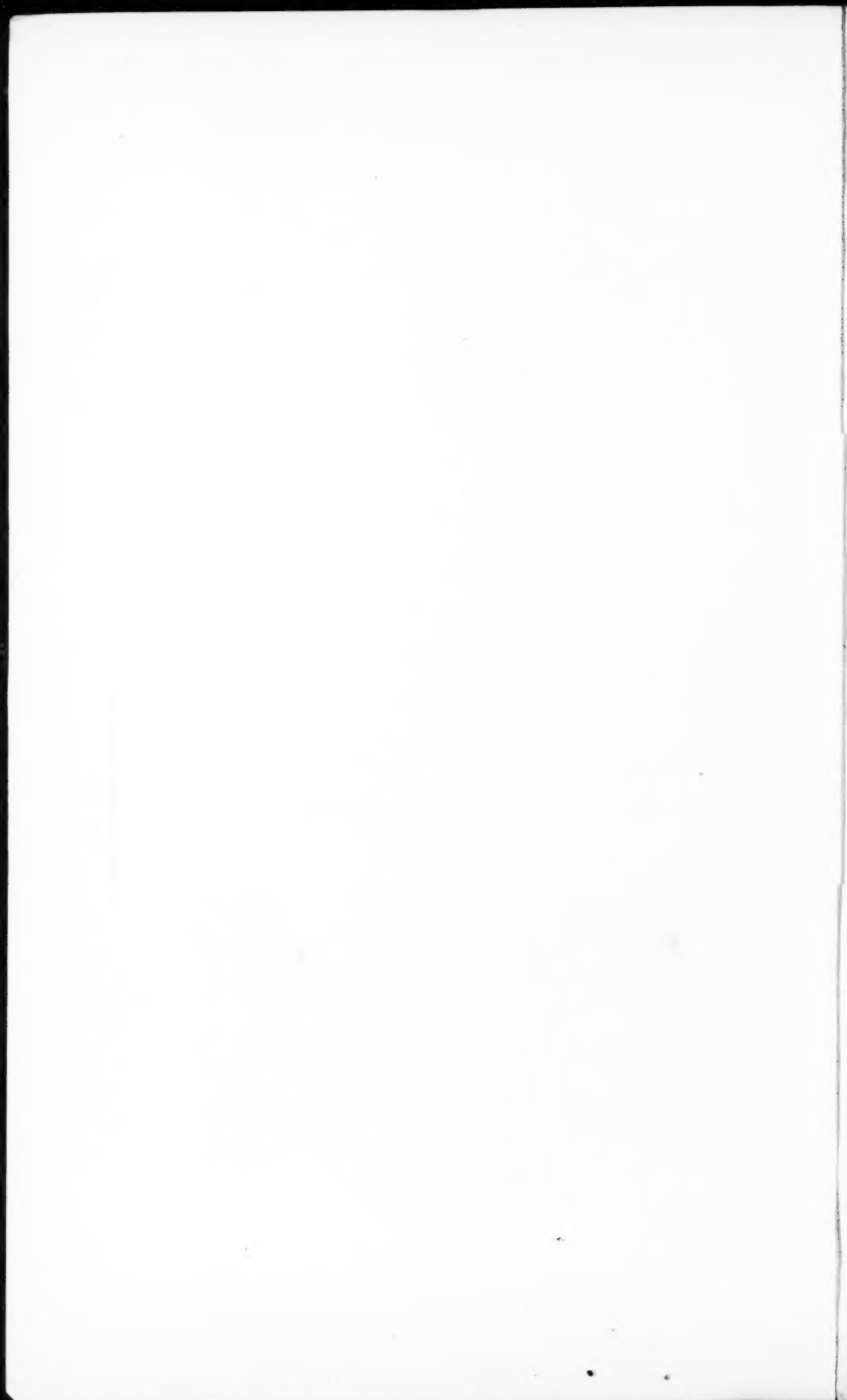
ADDENDUM.

Page 719, line 2: to East Longitude add "*Reckoned from the Observatory of Pulkoff, which is 30° 19' 40" East of Greenwich.*"

ERRATA.

Page 721, foot note: for "*Egyptians*" read "*Ethiopeans.*"

Page 732, line 22: for "*Aksua*" read "*Aksum.*"



THE JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

VOL. XL.

JULY, 1896.

No. 221.

[Authors alone are responsible for the contents of their respective Papers.]

FIELD-MARSHAL

FITZ-ROY J. H. LORD RAGLAN, G.C.B.

LORD FITZ-ROY JAMES HENRY SOMERSET, afterwards created Baron Raglan, was born at Badminton, on 30th September, 1788. He was the eighth and youngest of eight sons of the fifth Duke of Beaufort, of whom more than one rose to high distinction in the Army. His mother was a daughter of Admiral the Hon. Edward Boscawen.

When at Westminster School an incident occurred which showed the kind disposition for which he was in after life remarkable. He was placed in a higher form than his brother, Lord John Somerset, but begged of the Head Master not to be put above his elder brother, and his request was granted. After leaving Westminster he entered the Army at the age of fifteen, receiving his first commission on 9th June, 1804, as Cornet in the 4th (Queen's Own) Regiment of Dragoons, and being promoted to Lieutenant on 30th May, 1805. In 1807 he was attached to the Hon. Sir Arthur Paget's Embassy to Turkey; and on 5th May, 1808, obtained a company in the 6th Garrison Battalion, from which, three months later, he was transferred to the 43rd Light Infantry. So that he had the advantage, like his master and friend the great Duke, of acquiring in a subordinate rank, a practical knowledge of the various duties, uses, and capabilities of both cavalry and infantry.

When Sir Arthur Wellesley was appointed to the command of the troops in the Peninsula, Lord Fitz-Roy Somerset accompanied him to the seat of war; serving, in the first instance, as his Assistant Military Secretary and Aide-de-Camp, and afterwards as Military Secretary. From this moment to the victory of Waterloo he attended the Duke of Wellington in every action. It is related that, after the first action in which he was engaged, Sir Arthur Wellesley inquired of him: "Well, Lord Fitz-Roy, how do you feel under fire?" "Better, sir, than I expected," was the reply; an answer which, from its frankness and modesty, is said to have very favourably impressed his chief.

He was present at the battles of Roleia, Vimiera, and Talavera; and in that of Busaco, on the 29th September, 1810, where he was repeatedly under a galling fire, he received his first wound. The two engagements at Fuentes d'Onoro, on the 3rd and 5th May, 1811, afforded him further opportunities of displaying that high courage and tact for which he had already become so conspicuous; and in both these actions he greatly distinguished himself, and was promoted Brevet-Major on the 9th June. Sir William Napier pays the following high tribute to his merits at this critical period:—"Lord Fitz-Roy Somerset, Military Secretary, had established such an intercourse between the headquarters and the battalion chiefs, that the latter had, so to speak, direct communication with the General-in-Chief upon all the business of their regiments, a privilege which stimulated the enthusiasm and zeal of all. For the regimental commanders being generally very young men, the distinctions of rank were not rigidly enforced, and the merit of each officer was consequently better known and more easily supported when promotion and honours were to be obtained. By this method Lord Fitz-Roy acquired an exact knowledge of the moral state of each regiment, rendered his own office important and gracious with the Army, and with such discretion and judgment that the military hierarchy was in no manner weakened. All the daring young men were excited, and, being unacquainted with the political difficulties of their General, anticipated noble triumphs, which were happily realised."

After participating in the assault and capture of Ciudad Rodrigo, Lord Fitz-Roy Somerset acquired additional distinction by his gallantry and intrepidity at the storming of Badajos, on the night of the 6th April, 1812. The horrors of that fight were not soon forgotten. The roar of cannon and musketry, the rush forward of forlorn hopes, and their spring into the fatal ditch, the columns of sturdy British infantry rolling on to the attack, the cheers, the shouts, the groans, the cries of triumph and despair, the crash of walls, and the general din are powerfully and vividly described by Napier. In the midst of this scene a figure rises, like a shadow, on the summit of a distant rampart. Others follow in breathless succession—there is a shout, a charge, a roll of musketry, an English party is in the streets, and Lord Fitz-Roy Somerset is soon found among the foremost. Making his way to the stronghold of San Christoval, to which the French Governor had retreated, he secured the drawbridge, and prevented the enemy from continuing their resistance. By this prompt measure he completed the success of the operation, and on the following morning had the honour of receiving the submission of the French Governor. In recognition of his services he was promoted Lieutenant-Colonel in the Army by brevet on the 27th of the same month.

By the side of the Duke he was present throughout the battles of Salamanca and Vittoria in 1812 and 1813. At length the French were driven into the Pyrenees, and Soult prepared to dispute its passes. While the French General was occupying the Vals de Zubiri and de Lanz, threatened in front by Cole, supported at a little distance by

Picton, Wellington galloped on to Sauroren, attended solely by Fitz-Roy Somerset, "the only staff officer," says Napier, "who had kept up with him." At this moment Clausel was making for this very town, and Wellington observed his troops advancing hastily along the ridge, which, thus secured, would necessarily cut off the allies. The crisis was imminent, the French being almost within gunshot; but Wellington drew up, wrote an order on a slip of paper to the General of the 6th Division, and gave it in charge to Lord Fitz-Roy, who, while Wellington galloped up the mountain to his troops in front, rode off in another direction, quitting the town at one end as the French cavalry entered it at the other. Cheers pealing from the heights announced the safety of Wellington, who instantly presented himself on an open spot, where he could be seen by the enemy, and whence he himself discerned Soult. Here it was that he made a remarkable exclamation, as if in commune with some unseen intelligence, and which will be quoted in the words of Napier—"Yonder is a great commander, but he is cautious, and will delay his attack to ascertain the cause of these cheers; that will give time for the 6th Division to arrive, and I shall beat him." And the French General made no serious attack that day.

Making his way alone through passes infested by the enemy, and swept by a fearful storm, Lord Fitz-Roy arrived early in the afternoon at Olague, in the valley of Lanz, where the 6th Division had come to a halt; and, in obedience to his orders, brought it round by Lizasso after passing a night on the road. At this point it was able to communicate with the 7th Division, which had come up by another route; and thus by a masterly movement, Wellington converted a position of danger into one of great strength. The two battles of Sauroren followed, inflicting a terrible chastisement on Soult; and in both sanguinary engagements Lord Fitz-Roy Somerset bore a prominent part.

The strong fortress of Pampeluna was the bulwark of the Pyrenees; but Soult, though sensible of its paramount importance, relied on its strength and resources for a protracted defence. Wellington and Fitz-Roy Somerset were riding unattended through one of the mountain passes, when they were met by a muleteer, dispatched by the French Governor with a secret communication to Soult. Struck by the appearance of Wellington, he instantly set him down as the French Marshal, who was supposed to be in the neighbourhood; and as he came up, he took a scrap of paper from his mouth and presented it to him. It was inscribed with ciphers. "If we could unravel this, we might gain some intelligence," said Wellington, handing the paper to his companion. Lord Fitz-Roy scanned it attentively, and, detecting two or three vowels, quickly deciphered the whole, whence it was discovered that if Pampeluna were not relieved by a certain day, the Governor would be obliged to surrender. Wellington took his measures accordingly, and the renowned stronghold fell into his hands. With the key of Spain he unlocked the gates of France, and hurried rapidly on to the engagements of Nivelle, Nive, Orthes, and Toulouse—battles ever glorious to the British arms, in which

Lord Fitz-Roy won fresh laurels by his promptitude, intrepidity, and chivalrous indifference to danger. The peace of 1814 permitted him to return to England, where his close connection with Wellington was cemented by his marriage with Emily Harriet, daughter of the Hon. William Wellesley Pole, afterwards Lord Mornington, and niece to the Duke. In acknowledgment of his military services, Lord Fitz-Roy was awarded the Peninsula gold cross with five clasps for Fuentes d'Onoro, Badajos, Vittoria, Salamanca, Pyrenees, Nivelles, Nive, Orthes, and Toulouse; and on the institution of the Peninsula silver war medals he received one with five clasps for Roleia, Vimiera, Talavera, Busaco, and Ciudad Rodrigo.

On the 25th July, 1814, he was transferred from the 43rd Light Infantry to Captain and Lieut.-Colonel in the 1st Foot Guards on augmentation. In the same year he was appointed to the post of Secretary to the British Embassy at Paris, and was Minister Plenipotentiary there for a few months in 1815. But Buonaparte's escape from Elba and the recommencement of hostilities with France in that year recalled Lord Fitz-Roy Somerset to the seat of war. That short campaign of 1815 entailed on him duties no less onerous than arduous. The old Peninsula Army no longer existed, and the ambition of Napoleon had to be met with hastily raised levies and Militiamen. But the same high qualities that had enabled Fitz-Roy Somerset to do such good work in the Peninsula produced a similar effect in the Waterloo campaign. Those who in the days of the Crimean War attacked the administrative ability of Lord Raglan probably knew little of the career of Fitz-Roy Somerset. Under his direction the various foreign contingents were, as regards the staff, soon brought into cohesion; the allied commanders enjoyed every facility for communicating with the Commander-in-Chief; and, in the midst of hurry and movement, the well-organised staff executed its duties with the regularity of a machine.

The morning of the 16th June, 1815, found the Allies in possession of Quatre Bras. Wellington was on the ground at 10 o'clock, accompanied by Lord Fitz-Roy, who assisted him in reconnoitring the enemy. With his illustrious chief he was throughout the day in the post of danger. At one time, nearly overtaken by some French Lancers, they were obliged to make at a gallop for the 92nd Highlanders, to whom the Duke called to lie down in a ditch, and then fairly leaped over them. This, however, was only one of the hairbreadth escapes of Lord Fitz-Roy, and he was continually bearing orders from his chief to every part of the field. At the final victory of Waterloo he had his full share of its horrors as well as its glory, for there he lost his right arm. Wellington announced the disaster to the Duke of Beaufort in the following interesting letter:—"I am very sorry to have to acquaint you that your brother Fitz-Roy is very severely wounded and has lost his right arm. I have just seen him, and he is perfectly free from fever, and as well as anybody could be under such circumstances. You are aware how useful he has always been to me, and how much I shall feel the want of his assistance, and

what a regard and affection I feel for him, and you will readily believe how much concerned I am for his misfortune. Indeed, the losses I have sustained have quite broken me down, and I have no feeling for the advantages we have acquired. I hope, however, that your brother will soon be able to join me again, and that he will long live to be, as he is likely to become, an honour to his country, as he is a satisfaction to his family and friends." For his distinguished services in the Waterloo campaign Lord Fitz-Roy Somerset was appointed extra Aide-de-Camp to H.R.H. the Prince Regent, with the rank of colonel in the Army, was created a K.C.B., and received the Waterloo medal and the Orders of Maria-Theresa of Austria, St. George of Russia, Maximilian Joseph of Bavaria, and the Tower and Sword of Portugal. Lord Fitz-Roy took lessons in writing ten days after the loss of his right arm, and quickly learnt to write well with his left hand. He soon took again to riding, and was an excellent horseman.

In 1816 he resumed his former diplomatic duties as Secretary of Embassy at Paris. He subsequently accompanied the Duke of Wellington to the Congresses of Vienna and Verona; and afterwards attended him, in the same capacity, in his special mission to St. Petersburg, on the occasion of the accession of the Emperor Nicholas. In 1823 he was himself entrusted with a special mission to Madrid, where his former distinguished reputation was still remembered and insured him a gratifying reception in that capital. He was promoted to the rank of Major-General on the 27th November, 1825. All this time he held the post of Secretary to the Master-General of the Ordnance to which he had been appointed by the Duke of Wellington in 1819; and he continued to occupy the position till the 29th August, 1827, when he became Military Secretary to the Commander-in-Chief, the duties of which he performed until the 30th September, 1852, with great tact and ability.

On the 19th November, 1830, Lord Fitz-Roy Somerset was appointed Colonel of the 53rd Regiment; in 1834, on the occasion of the installation of the Duke of Wellington as Chancellor of the University of Oxford, he had the degree of D.C.L. conferred upon him; on the 28th June, 1838, he was promoted to the rank of Lieut-General; and in September, 1847, he received the Grand Cross of the Order of the Bath. On the death of the Duke of Wellington he obtained, on the 30th September, 1852, the post of Master-General of the Ordnance; and in October of the same year was elevated to the peerage with the title of Baron Raglan of Raglan, county Monmouth, and was constituted a Privy Councillor. He was subsequently, on the 8th May, 1854, appointed Colonel of the Royal Horse Guards (the Blues), and was promoted to General on the 20th June of the same year.

The period had now arrived when he was to enter on the most distinguished part of his career, for when, on the outbreak of the Crimean War, in 1854, it was determined to send an expedition to the East, the Government appointed Lord Raglan to the command. He was then sixty-five, an age when men usually consult their own ease. He was occupying for

the first time a position which enabled him to accumulate some provision for his family, yet Lord Raglan suffered no considerations of this kind to interfere with his duty, but promptly accepted the charge. He arrived in the East on the 29th April, and was soon engaged in carrying out, what Sir John Burgoyne pronounced as "a desperate enterprise," the attack on Sebastopol. He himself declared, in a public despatch, that it "was undertaken more in deference to the wishes of the Government" than was justified by the information in his possession. The battle of the Alma, in which he showed great personal bravery, was fought, and won on the 20th September, 1854. Lord Raglan was accused of an error of judgment in not following up this battle by a *coup de main* on Sebastopol, but it is not proposed to discuss that point here. It is known, however, that when, by that flank movement, which frustrated the long-planned tactics of the enemy, he afterwards brought the Allies to the South of Sebastopol, it was found to be an impregnable fortress, mounted with numerous guns, manned by 6,000 gunners from the fleet, defended by a garrison of nearly 30,000 men, provisioned for a year's siege, supported by an army of co-operation, and possessing an inexhaustible arsenal. In front of this stronghold a popular outcry and a feeble Government had sent on an enterprise, undertaken with insufficient means, the noblest spirits of England to sicken, and rot, and perish.

It is scarcely necessary to allude to the circumstances connected with the battles of Balaklava and Inkerman, beyond saying that the aged General animated every heart by his grand example of calmness and *sang-froid* in the thickest of a heavy fire. For the victory of Inkerman, Lord Raglan was rewarded by Her Majesty with the bâton of a Field-Marshal, and the Sultan of Turkey conferred on him the Imperial order of the Medjidie of the 1st class.

Who is not familiar with the horrors of the winter campaign before Sebastopol? The heroism of the British soldiers, insufficiently clad and housed, worn out with toil, harassed by continual alarms, and stricken with every evil but cowardice and despair; the indomitable fortitude with which they sustained the ordeal, the patience and courage with which they bore every privation and suffering, will never fade from the memory of Englishmen. During all this time, and by every means in his power, Lord Raglan exerted himself to alleviate the hardships and distress of his army. Yet while he was engaged in this harassing task, and while he was making superhuman exertions to supply every want, and, at the same time carry on the work of the siege, he was overwhelmed with abuse and misrepresentation at home, unjustly assailed even by some of his officers, and slighted by the Government. Only the strongest sense of religion and duty, and the support he received from the Queen and the officers and soldiers of his army, enabled his noble spirit to bear the animadversions, misrepresentations, and calumnies to which he was exposed. But there is a limit to all human endurance. The attack of the 18th June was not, it is known, carried out in accordance with the plan proposed by Lord Raglan and approved by his French ally,

else the result might have been different. Against his own judgment he was obliged to support the attack. On that fatal day he shared, with his usual intrepidity, all the dangers of the fray, occupying so exposed a station that the officers and soldiers, as they passed, cried out to his Staff: "If you want Lord Raglan to be killed, you'll let him stop there." His grief at the result, and at the lamentable loss of life it entailed, preyed on a mind harassed by so many cares, and he succumbed rapidly to an attack of diarrhoea, which easily subdued a frame weakened by anxiety, and bent with the burden of a divided command. After an illness of several days he seemed to rally, but it was only the flame flickering in the socket; and with the officers of his Staff gathered mournfully round his humble bed, he passed away in the camp before Sebastopol, on the 28th June, 1855, in his sixty-seventh year. His body, attended by the commanders-in-chief of the English, French, Turkish, and Sardinian armies, was removed on the 4th July, to Kazatch Bay, whence it was brought to England and buried privately at Badminton, on the 26th of the month. His great services to his country were acknowledged in a general order, of the 4th July, in which occur the following passages: "By his calmness in the hottest moments of battle, and by his quick perception in taking advantage of the ground or the movements of the enemy, he won the confidence of his army, and performed great and brilliant services. In the midst of a winter's campaign, in a severe climate, and surrounded by difficulties, he never despaired. The heroic army, whose fortitude amidst the severest privations is recognised by Her Majesty as beyond all praise, have shown their attachment to their commander by the deep regret with which they now mourn his loss." General Pélessier, in a general order to the French Army, said: "Those who knew Lord Raglan, who were acquainted with the history of his noble life, so pure, so rich in services rendered to his country; those who witnessed his bravery on the fields of Alma and Inkerman, who remember the calm and stoic grandeur of his character during this severe and memorable campaign—all men of heart, in fact—must deplore the loss of such a man."

It is not proposed here to enter into an argument as to the tactical and administrative qualities of Lord Raglan. He was, however, the pupil, the disciple, and confidant of the greatest English general of modern times. The Duke of Wellington admired and respected his talents, and acknowledged his indebtedness to him for much sagacity and foresight, his fertility of resource, his promptitude, and his power of combination; while Napier eulogised his administrative capacity and his influence in the Peninsula and Waterloo campaigns. No general ever undertook a campaign of greater magnitude and difficulty than did Lord Raglan in the Crimea, for of all the tasks which can be imposed on a military commander, that of a divided command is by far the most difficult. This task, not always under easy circumstances, sometimes not without peril and inconvenience, he performed on the whole with remarkable success.

Lord Raglan was brave to a fault, always foremost in the moment of danger, and to the last distinguished by his personal prowess. He was an admirable horseman, possessing a vigorous constitution, unsurpassed powers of endurance, and a frame capable of sustaining the greatest fatigue. Upon the field of battle he exposed himself to excess, and showed an enthusiastic contempt of danger. He dashed across the Alma in the midst of the Russian fire with the gaiety of a foxhunter. He was the first to come upon the Russian convoy on the flank march, and to ride under fire down the defile of Balaklava. At Inkerman, when he ordered the 18-pounders to be brought up which decided the fate of that bloody day, he stood under a shower of balls. He was in every sense a patriot, a soldier, and a gentleman. His charm of manner, his even temper, and kind heart, endeared him to all, for he was equally courteous to high and low. He was a man of strong religious convictions, deep feeling, and high principle, and it is not surprising that he was loved by his soldiers. When his death was announced to the troops, many a proud eye paid him the tribute of a tear.

There have been generals of higher military genius than Lord Raglan, but no more noble character ever wore the uniform of a British soldier. The reputation he leaves behind him is one which the bravest might be proud to enjoy, and the best might envy.

R. HOLDEN.

THE STUDY OF NAVAL HISTORY.

*By J. K. LAUGHTON, M.A., R.N., Professor of Modern History
at King's College, London.*

Wednesday, March 11th, 1896.

Colonel The Right Hon. The Marquis of Lothian, K.T.,
3rd Bn. The Royal Scots, in the Chair.

MANY of us must have been struck with the increased interest now felt in Naval History, both in the Service and out of it. It is now realised that it is the past which must lead us in the future, and that the study of naval strategy and of naval tactics is linked in the closest possible manner with the study of our history; that to know what the men of old did, and why and how they did it, to know what they failed in doing, and why and how they failed, is the best of all guides for achieving success or avoiding failure.

Curiously enough, this has not always been so. It is within my memory, and the memory of many here, that twenty years ago a very different feeling was prevalent; that it was very generally believed that under the circumstances of modern war—steam, torpedoes, rams, electricity, and so forth—the story of the past no longer held out any lessons for the future; that in the science of naval war we were absolutely without a guide, and that we should enter on any new contest in utter ignorance of the possibilities or the probabilities before us; out of which belief came many wild proposals, many wild theories, and much vague, but acute, alarm.

It is not for me now to discuss any of these; but I may just mention as one of them, the theory—still living, I understand, in France—that the naval war of the future will be waged—like an epidemic of small-pox or cholera—by microbes or bacilli; that the torpedo-boat will be the master of the situation, and that the strength of a nation will mainly depend on the infinitesimal nature of its armament. Such a theory is not altogether new; the alarm to which it gives rise was familiar ninety years ago, when our enemy across the Channel proposed to annihilate our naval power by means of oar-impelled gun-boats. One of the heaviest charges brought against the Earl of St. Vincent, and put into the mouth of Mr. Pitt, was that he had endangered the safety of the Kingdom by neglecting to provide an adequate number of gun-boats to repel the

contemplated attack. St. Vincent and Troubridge, his colleague at the Admiralty, held that the enemy's gun-boats would be most effectively met by ships of the line; and Pellew, in set phrase, agreed with them; through the enemy's "mosquito-fleet," he said, "ships of the line and frigates would make their way in all directions."

It will be, perhaps, interesting to you if I endeavour to trace the growth of the more healthy feeling to which I have referred; and this I can the better do, as I believe I have myself been one of the instruments employed in bringing it about. Other agencies have, no doubt, also been at work, but the first and principal mover was—to the best of my knowledge—the late Admiral Sir Cooper Key. Twenty-two years ago I had the honour of reading a paper in the Theatre of this Institution on what I called—I believe rightly called—"The Scientific Study of Naval History." The term "scientific" was, however, objected to, probably because at that date men could not, and did not, realise that there was any science about it. Naval history was supposed to be a very unscientific story of blood and thunder. In that paper I urged "the use, advantage, and importance to naval officers of the study of naval history," not considered as "a bald relation of battles and armaments, of victories or defeats," but as a serious attempt "to trace the course of events to their origin, to distinguish the causes which have led to success or to failure, and to examine into the influences which have, at different periods, rendered different countries powerful by sea." Sir Cooper Key, then President of the Royal Naval College, and Admiral Sir Alfred Ryder were both present on that occasion; both spoke strongly in support of my contention, and the latter said—it serves now to mark the date—"I believe our young officers have not studied naval history as they ought to have done. I doubt very much if they would know the names of many of our great victories, or anything about them, if you questioned them."

In the following year, 1875, the Council of this Institution, by inviting me to read a paper on the work of the Royal Naval College, gave me another opportunity of urging the importance of the study of naval history; and in consequence of this assault, Sir Cooper Key asked me to undertake a course of lectures on the subject at Greenwich. This I gladly agreed to do, and for the next twelve years I gave a short course each year to the officers studying at the College. Admiral Colomb then took up the work, and has continued it in a somewhat modified form to the present time.

Now, though it is quite impossible in a short course of six, or eight, or, at most, ten lectures, to do more than give an outline of the subject, or to illustrate some few of the more important events, I am happy in knowing that many of those who have attended these lectures have been led by them to pursue the study at their leisure, with—in some cases, at any rate—very marked success. It is, in some sense, difficult to over-estimate the value of the boon which Sir Cooper Key conferred on the Service in instituting these lectures. I think I do not err in assigning to them a large share in the preparation of the ground for the good seed scattered by Captain Mahan in 1890.

Captain Mahan's admirable work, "The Influence of Sea-Power upon History," obtained a ready recognition in our Service, but not from the general public. It is true that the several reviews, written by more or less competent men, strongly commended it; but the world at large cared little for it, or—which comes to the same thing—refused to buy it. But the Naval Exhibition of 1891 woke the public up to a knowledge that we have a Navy, that our Navy has a history, and that after all that has been said about them, sailors differ from their countrymen mainly in being finer specimens of the race. We all have vividly before us the enthusiasm which that exhibition excited, and the eagerness with which people began to read about the Navy, not always from the best sources, but still to read and to enquire. The panorama of Trafalgar, false as it was in almost every detail, nevertheless served to give the crowds of London some conception of what the battle might be like; and the presentment of the "Victory," and of the celebrated scene in the "Victory's" cockpit struck a sentimental chord in the great English heart.

And before the feelings and memories so excited had time to die, Captain Mahan's second great work, "The Influence of Sea-Power upon the French Revolution and Empire," was published. People read it, in the first instance, because it appealed to their awakened sympathies, and continued to read it for the interesting manner and the admirable clearness with which it dwells on the critical points of the great struggle which it treats of. Few, whether seamen or landmen, who have read that now celebrated passage in which Captain Mahan described the long, wearisome blockade of the French coast in 1803, 1804, 1805, can ever forget the deduction which he draws from its result.

I am not now speaking of naval literature in general; otherwise, I should be bound to dwell on Admiral Colomb's "Naval Warfare," and Mr. Wilson's more recent "Ironclads in Action," works of great value, and which, I gather from the advertisements, have had a marked success. But this, I take it, is an effect rather than a cause of the increased and increasing interest now felt in all matters connected with the Navy—a more healthy state of public opinion, which we all, to the best of our ability, ought to assist in strengthening.

Now, in this, as in other matters, public opinion is largely built up of sentiment, but it must be based on facts, and facts are history. If we know what has been found possible and what impossible in the past, we can form a rational idea of what may be possible or impossible in the future. It is but a poor argument to say—as I so often hear said—"We must have a strong Navy, because Mr. Cobden said we ought to have one." Rather let us say—"We must have a strong Navy because the facts of our history prove that by it we can render our coasts secure, can defend our Colonies, can protect our own commerce and annihilate the enemy's, can wipe his flag off the seas, can place our army wherever we please—in our enemy's country, if it suits us—can deal him crushing blows, or shut him up to stew in his own grease." In this lies the enthralling interest of Captain Mahan's work on the French Revolution; in his picture of the struggle between the sea and the land, and the overthrow of Napoleon

by the slow, ceaseless, grinding of sea-power. To realise this, is an enormous gain to our political knowledge; to understand it, is as great a gain to our professional knowledge; and, therefore, I say that, alike as Englishmen, and as naval officers, the history of our Navy—and of all other Navies—is a study of the first importance.

Now, in this, as in any other branch of science, we must take it as a whole. We cannot take part and leave part, any more than we can take the even and leave out the odd numbers in the multiplication table. But this is exactly what so many of our writers on naval history have done. They have wished to give us the fighting and nothing else, with the result that their descriptions—even of the fighting—are, for the most part, unintelligible. As a mere chronicle of battles, James's "Naval History" is a work of great merit; but as a history, it is almost worthless. From it no one can make out what it all means; ships roam the ocean, without any why or wherefore, like a black retriever on the rampage; and, when they sight an enemy's ship, fight her from pure devilry. We know that this was not the case; that the approximate position of every ship was carefully ordered in its relation to some concerted plan of action; but a man might study James from youth to old age without finding this out.

The much-abused Brenton had, in this respect, a much better idea of what a naval history ought to be. We can see what he has aimed at; we can also see how signal his failure, because he was, apparently, utterly incapable of distinguishing truth from falsehood, ignorant of the most elementary laws of evidence, and bitterly prejudiced. To the would-be historian his work is suggestive; to the student it is worthless.

Beatson's "Naval and Military Memoirs" of the wars of the eighteenth century from 1727 to 1783 is a perfectly honest book, though clumsy, badly-written, and by no means very accurate. The writer had, in fact, no special opportunities, and compiled the work from such reports as were published in the newspapers or in the *Gazette*. With care, however, it is useful, and, in any case, is the best we have. Entick's "History of the late War," that is, of the Seven Years' War, is compiled from similar materials to those used by Beatson, but is even more crude. Lediard's "Naval History" is quaint and pleasing from the *naïveté* of his beliefs; but as a guide to the student can only be used with great caution.

It would be a simple matter to go through the range of English and French published books in this manner, but I am afraid it would be rather tedious, and would certainly be monotonous. It will probably be more interesting to you if I give you some account of the way in which I myself have endeavoured to supplement our very imperfect literature.

When I accepted the appointment of Lecturer on Naval History at the College, it became necessary for me to study many points in much closer detail than I had previously done; but a very short experience taught me that the details I wanted were not to be had. No books contained them. Here and there a badly-written and ill-tempered pamphlet might throw light on questions of organisation, or on some great scandal; but, as a rule, details were conspicuously absent. Even the accounts of the fighting

were very unsatisfactory. It was not the fashion in the last century for commanders-in-chief to give any particular descriptions; if they won a battle—even a great battle—they considered it, as a rule, sufficient to say so. You will all remember what seems now the very unsatisfactory account of the battle of Cape St. Vincent in Jervis's despatch. From Nelson's despatch it is exceedingly little we should know of the battle of the Nile; from Collingwood's we should certainly not arrive at an understanding of the battle of Trafalgar, and the less so that I do not think Collingwood understood it himself.¹

All these we know from other sources. Of the battle of Cape St. Vincent we have an admirable account written—it is rather a noteworthy fact—by a soldier, Colonel Drinkwater-Bethune. Of the Nile, we have the accounts written by Berry and—which is still better—by Miller; but, best of all, we have the few lines written by Nelson himself to Lord Howe. They must be well known to you, but I cannot resist the temptation to repeat some of them as embodying the principle which Nelson was the first, in modern times, to reduce to practice. "By attacking," he wrote, "the enemy's van and centre, the wind blowing directly along their line, I was enabled to throw what force I pleased on a few ships." Similarly for Trafalgar, we have the celebrated memo. of October 9th; issued, indeed, twelve days before the battle, and therefore omitting all the special details, but again emphasising the same principle:—"The whole impression of the British Fleet must be to overpower from two or three ships ahead of their commander-in-chief, supposed to be in the centre, to the rear of their Fleet."

It is the same for the several battles of the eighteenth century; we can understand nothing about them except from other and incidental sources. The story of Keppel's action for instance—the notorious action off Ushant on July 27th, 1788—was thoroughly thrashed out in the two great courts-martial on Keppel and Palliser. That of the action off Minorca, on May 20th, 1756, is minutely given in the minutes of the court-martial on Byng. But of most of the others we know but little. We have read, for instance, that Rodney—whose fame lives principally in connection with his victory over the Comte de Grasse, on April 12th, 1782—considered the battle of April 17th, 1780, as the most brilliant effort of his genius, which failed in consequence of the ignorance, stupidity, or disobedience of some of his subordinates. But if you will examine the printed accounts, you will find it absolutely impossible to make out exactly what took place. I do not think it can even be determined from them what tack the fleets were on, or whether they were on the same or opposite tacks. The admirable work of Captain Chevalier, of the French Navy²—which, by the way, was not published at the time I am referring to—is of great assistance in the study of this and other battles of the War of American Independence; and the pamphlets—they are little more of

¹ If he had, he could not have issued such a General Order as he did on March 23rd, 1808. See Newnham Collingwood's "Life of Collingwood," p. 360.

² "Histoire de la Marine française pendant la Guerre de l'Indépendance américaine"; par E. Chavalier, Capitaine de Vaisseau.

Lieutenant Matthews¹ and Captain White,² of our own Service—are most valuable; but there are still many details wanting for an exact understanding of what took place.

I might mention many other instances in which something more or less important is wanting. Everybody is familiar with the story of the "miscarriage" off Toulon on February 11th, 1744, and with the result of the court-martial, which acquitted Lestock, and cashiered Mathews; as to which Campbell wrote:—

"Mathews might want head; Lestock certainly wanted heart. The one might deserve censure; the other ought to have been shot. By what extraordinary evidence, or other instigation the members of the court-martial who determined the fate of these admirals were influenced, I know not; but their sentence must for ever remain a blot in the annals of this country."

And this opinion people have gone on repeating ever since, taking it for granted that the officers who sat on the court were so blindly prejudiced that they could not distinguish between good conduct and bad; though Campbell admitted, plainly enough, that he wrote in ignorance, and that he did not know what evidence had influenced the court.

One more example, and I will have done. You can all read in Beatson,³ and in Charnock,⁴ the account of the capture of the "Anglesea" off Kinsale, on March 29th, 1745. This has to me the particular interest of being the incident on which I struck. I happened to have some remote personal interest in the story of Baker Phillips. An old messmate and dear friend, who is, I think, a descendant of Phillips, or rather—for Phillips died without issue—of his wife by a second marriage, asked me some question about the engagement, which I was quite unable to answer to my satisfaction. Now, I had noticed that of all the printed materials, none gave so clear and certain a picture of what had taken place in any action as the minutes of the court-martial in those cases where one had been held. I have spoken of those on Keppel, Palliser and Byng, I may name a couple more: that of Knowles, for his conduct in the battle of Havana, on October 1st, 1748; and that of Mostyn, for his conduct on January 6th, 1745, to which must be added the violent criticism on the finding of the court.⁵ This gave me the idea of enquiring whether somewhere at the Admiralty there did not exist the minutes of the many hundreds of courts-martial, which have never been printed.

I soon found that they did exist, not, indeed, at the Admiralty, but in the Public Record Office, though under Admiralty control; and I also found—remember I am speaking of nearly twenty years ago—that access

¹ "Twenty-one Plans of Engagements in the West Indies."

² "Naval Researches."

³ "Naval and Military Memoirs," I., p. 297.

⁴ "Biographia Navalis," V., p. 89.

⁵ "An enquiry into the conduct of Captain Mostyn, being remarks on the minutes of the court-martial and other incidental matters." By a sea-officer—possibly Vernon.

to them was forbidden without special permit. However, by favour, I was allowed to see the minutes of the court-martial on the loss of the "Anglesea"—but not to make notes of it. For my immediate purpose it was sufficient; but I then came to the conclusion that, to do justice to the work I had undertaken, it was essential that I should get permission to have free access to the great body of Admiralty documents which I had discovered to be preserved in the Record Office. This, I was told, was impossible; it had never been granted to anyone. However, I asked—and was refused. A year or two later I asked again, and was referred to the former letter of refusal.

In 1879, when Sir Cooper Key became First Sea Lord, I consulted him privately about the matter; and, after some consideration, he desired me to make another formal application, stating as exactly as possible what I wanted; and suggested that it would be better for me to limit my request to documents antecedent to the year 1815. This was what I did, and in due time I received the permission I desired; permission, that is, to read and to copy any of the Admiralty records down to the close of the Great War.

I was then, and for many years afterwards, the only person who enjoyed that permission; but in 1885, the Admiralty records, down to the year 1800, were thrown open to the general public; and in 1887, the limit was extended to 1815, at which it now stands.

At the present time, any person whatever can go to the Public Record Office—without ticket, permission or any other restriction—and, by merely writing his name, can have put before him any document, not later in date than 1815, which he likes to ask for; and, having it before him, he is at perfect liberty to copy the whole of it, or any part of it, at his pleasure; and either with his own hands or with the hands of an agent. If he wishes to consult any document later than 1815 the old difficulty comes in. He must apply formally to the Admiralty, stating exactly what he wants and why he wants it; but I may add that in the few cases in which I myself have had to apply for such extended permission it has been very readily granted me.

It seems important that I should say this, for comparing the very small number of naval officers that I meet at the Record Office with the large number that are in or about London, and more or less interested in some problem in naval history, it seems to me that the facts are not generally known.

I may say, then, that for the last seventeen years, whether in connection with my lectures at Greenwich, or the work which—as probably some of you know—I have done for the "Dictionary of National Biography," or for other independent work, I have spent a great deal of time among the Admiralty records, and flatter myself—rightly or wrongly—that I know more about them than anyone not an official of the office. Any of you who have done work in the Record Office, or in the British Museum, or, indeed, in any large library, will have learned that a first necessity is a knowledge of what material there is, and how to find it. An understanding of the Catalogue of the British Museum is an

acquisition that requires many years' familiarity with it. The Record Office is less exacting, so far as the readers are concerned; probably because they are much fewer than at the Museum, because the staff of officers is relatively larger, and because, though they have many other and important and difficult duties to carry out, they act—with one consent—as if their sole duty and aim in life was to pilot the blind and instruct the ignorant.

I will now endeavour to put before you some account of what the Admiralty records consist of. And, first, the minutes of court-martial of which I have already spoken. Of these there is a continuous series from 1680 downwards. They are not complete, some, perhaps, never having been brought there, others having been taken away at some time or other—probably by some Secretary or Lord of the Admiralty—and not brought back. On the whole, however, the omissions are few and of no great consequence. In these we have the detailed examination of every general action about which any question was raised, and thus the depositions on oath of every minute particular, depositions, I may say, which occasionally reveal a good deal of hard swearing; as, for instance, in the court-martial on Lestock for his conduct in the action off Toulon, when Captain Powlett (afterwards Duke of Bolton), of the "Oxford," and several other officers of the Vice-Admiral's squadron, swore that the "Neptune," Lestock's flag-ship, reefed topsails; and Captain Stepney, of the "Neptune," with the "Neptune's" captains of the main and fore-tops, and other petty officers, swore positively that she did not reef topsails. It is a discrepancy which seems to me to admit of only one explanation—wilful and wholesale perjury.

Independent of that, it will give some idea of the available amount of detail on that or any kindred subject, if I say that the two courts-martial on Lestock and Mathews fill four thick volumes in foolscap folio, or, at a rough estimate, about 5,000 closely-written foolscap pages; and of the general value, when I say that the evidence there given fully warrants the sentence on Mathews, who, had he been tried ten years later, under the new Articles of War, must have been condemned to death. As to Lestock, my opinion was not materially changed. He was a stupid, ignorant, and, withal, capitious man, who—like many others in the eighteenth century—when he found that the admiral was attempting something which he did not understand, thought the best course was to do nothing. As his inaction was in accordance with the letter of the fighting instructions, and the evidence of his reefing topsails was judged insufficient, the court had no option but to acquit him.

I have already referred to the loss of the "Anglesea" and the execution of Phillips. A short account of this, as seen by the light of the court-martial, will, I think, be interesting, both from the extraordinary nature of the sentence, and still more, from its emphasising a point which has been much misunderstood, not only now, historically, but in former days, practically, and to our loss and detriment. As to the loss of the ship,

"the Court was unanimously of opinion that Captain Elton, deceased, did not give timely directions for getting his ship clear or in a proper posture of defence, nor did he afterwards behave like an officer or a seaman, which was the cause of the ship being left to Lieutenant Phillips in such distress and confusion, and that Lieutenant Baker Phillips, late second lieutenant of the said ship, by not endeavouring to the utmost of his power, after Captain Elton's death, to put the ship in order of fighting, not encouraging the inferior officers and common men to fight courageously, and by yielding to the enemy falls under part of the tenth Article. . . . They, therefore, do sentence him to death, to be shot by a platoon of musketeers . . . but . . . having regard to the distress and confusion the ship was in at Captain Elton's death, when he came to the command, and being a young man and inexperienced, they beg leave to recommend him for mercy."

This in itself seems inexplicable, the more so as the Lords Justices refused to recommend Phillips for pardon, and he was accordingly put to death. But the difficulty becomes intensified when we consider the particular circumstances. When the "Apollon" was first sighted she was dead to windward and under the sun; and supposing that she was the "Anglesea's" consort, the "Augusta," Elton took no further notice of her and went down to his dinner. As she ran down with a fresh breeze, she was close to the "Anglesea" before it was suspected that she was a French ship. Then Elton rushed on deck and all was hurry and confusion, but the quarters were not yet cleared when the "Apollon" ran under the "Anglesea's" stern about half a cable's length off, and rounded to under her lee quarter, pouring in her broadside. To gain time, Elton ordered the foresail to be set, the principal effect of which was to bury the "Anglesea's" lee lower-deck ports, so that she was nearly swamped in trying to use her lower-deck guns. Elton and the master were killed; the first lieutenant had been left at sick quarters; the "Apollon" was on the lee bow, rendering it impossible to bear up without fouling her; she was full of men; and the "Anglesea" was half full of water; and Phillips, after consulting with Taaffe, the third lieutenant, decided that no further defence could be made. I can see no reason for the sentence on Phillips, the persistence in carrying it out, unless there was some suggestion or suspicion of his being in the interests of the Pretender; but of this there was no mention at the court-martial.

But the point to which I wished specially to direct your attention is that the ship was lost by being engaged to leeward. Had the "Apollon" engaged her to windward, the "Anglesea" could have fired her broadside, and, at any rate, could have put her helm up without running on board a ship with a crew twice as strong as her own.

The printed report of the court-martial on Captain Mostyn, and the pamphlet already mentioned, show that the failure of the "Hampton Court" was due to the same cause, though more wilfully—the taking the weather gauge. In 1694, the 40-gun ship "Scarborough" was captured

off Tory Island in very much the same manner as the "Anglesea," that is, by the enemy taking the lee gauge; and going back still further, the printed accounts¹ of the Four Days' Fight, in June, 1666, all dwell on the disadvantage which we were at by being to windward of the enemy.

We often read of the brilliant seamanship displayed in former days in struggling for the weather gauge. Under certain circumstances, no doubt it was advantageous to have it; and especially with a fleet, as giving the opportunity to force the fighting; at other times it was, as we have seen, disadvantageous, as rendering it impossible to fight the lower deck guns, or, perhaps, even any of the guns. But I know of no case, as between two fleets or squadrons, in which we can be said to have gained the weather gauge by superior seamanship; though there were several cases in which the French, having the weather gauge to begin with, deliberately ran down to leeward and took the lee gauge. Byng's action off Minorca was one of these; Arbuthnot's off the Chesapeake was another; in neither of which did the weather gauge do us any particular good. In three well-known cases—off Ushant in July, 1778, and to windward of Martinique, in May, 1780, the French, having the weather gauge, chose to contest it; they kept it, and the casual recounters which followed resulted not from any superior seamanship, but from a shift of wind. On April 12th, 1782, the French had also the weather gauge, but were brought to action mainly by the lubberly conduct of the "Zélé," which had wandered through their fleet like the proverbial bull in a china shop.

So far as the fleets of last century are concerned, it is absolutely erroneous to speak of the English superiority of seamanship showing itself in struggles for the weather gauge. Where it did, I think, show itself, was in the sea-keeping power of the fleet, and in the ability of ships to keep together on a dark night or in stormy weather, without fouling each other. It will be remembered, for instance, that five out of the twelve ships with M. de la Clue, in August, 1759, lost sight of the Admiral during the night, leaving Boscawen, who had kept his fourteen together, to polish off the remaining seven; that while in presence of the English off Ushant, in July, 1778, the French Fleet had lost two of its number by collision; and that during Rodney's campaign in the West Indies, the French on several occasions, in the same way, lost the service of one or more ships, and notably on April 12th. If we give the word seamanship a more extended signification, and apply it to the art of keeping the ships clean and sweet, we may attribute to it also the long and close blockade of Brest, which Hawke kept up in 1759; whereas in 1779, when the Franco-Spanish fleet came into the Channel, they were driven out of it with fearful loss, by the fell enemy, putrid fever.

But independent of the accounts of engagements, the courts-martial give detailed accounts of the loss of ships, whether by the enemy, by wreck, or by fire. They contain also the history of cases innumerable of drunkenness, and crime following drunkenness, of mess rows, of tyranny,

¹ *Edinburgh Review*, vol. clxvii., p. 399.

insubordination, and of mutiny; in respect of which I need only allude to the volumes containing the trials of the mutineers of the "*Hermione*." Of all the Admiralty records, there are none so comprehensive and of such deep interest as these.

Next to them I may mention the many volumes of Admirals' Despatches. These are divided into stations; so that, given the station and date, the finding a particular volume wanted is very simple. They contain, of course, the despatches which were from time to time published in the *Gazette* though some of the most interesting of these have been removed by different secretaries of the Admiralty, or other men, with the idiosyncrasy of the jackdaw. John Wilson Croker appropriated a good many, though later in life his conscience smote him, and he made partial restitution by presenting them to the British Museum. But, besides these, there are very many more of less historical value, it may be, but of great professional interest; such, for instance, as the details of the celebrated quarrel between Rodney and Arbuthnot; and the enclosures are often of importance, such as the dispositions of the squadrons, state and condition of ships, and, towards the end of the time limit, the returns of punishment. The reports of "state and condition" of the ships under Hosier, off Porto Bello, in 1726-7, are about as ghastly a bit of reading as the most ardent hunter for sensation could desire. It was afterwards, as you know, said that Hosier died of a broken heart. He did nothing of the sort. He died of yellow fever, as did his immediate successors, St. Lo and Edward Hopson, together with eight or ten captains, about 50 lieutenants, and some 4,000 men.

The volumes of Captains' Letters are very numerous. They are arranged alphabetically and chronologically, beginning about the year 1695, and are approximately complete. They average something like thirty thick volumes of foolscap folio to each initial, or in all about 700. Many of the letters are, of course, mere common-place, referring to defects, warrants, men run, etc.; though even in these, points of interest every now and then start out. Some of you may, perhaps, have seen a query I addressed a short time since to the *Army and Navy Gazette*, as to the meaning of the term "ticket-men," towards the end of last century. I got two or three replies to the effect that ticket-men were men sent to sick quarters, with a ticket for their wages. But the men I asked about were not sent to sick quarters, but on board a merchant-ship, whose men had all been prest. However, the reference to the ticket-men sent to sick quarters showed me an instruction about men sent to merchant-ships, "in lieu of prest men"; that they were to be "trustworthy," and such as could "be depended on for their return"; and a few days later I accidentally lighted on a letter from the captain of a ship at Chatham, explaining that one of his men who had been so sent to a merchant-ship, but in the hurry had neglected to take a ticket, had been prest, and was on board the receiving ship at Portsmouth, from which he asked that he might be sent back to his own ship. But, independent of these, many of the Captains' Letters are of great interest and often of importance; whilst from the biographical point of view

—which I have frequently had to take—it is impossible to over-estimate their value.

Ships' logs, as preserved in the Record Office, go back to the end of the seventeenth century, but of the earlier date many are missing. Later, during the latter half of the eighteenth century, they are nearly complete. In working with these, however, a caution is necessary. They are not to be compared with ships' logs at the present day, and implicitly to be trusted. They are often—generally, indeed—very badly written, and contain the minimum of information. It is, of course, always advisable, where it is possible, to get the log written by the master or for the captain. If these were bad, those kept—perfunctorily—by the lieutenants were much worse. The log of the captain, or master, may generally, not always, be accepted as truthful in its statements. Where it is most likely to err is in omission. If it says that some named man died, and was buried, this is probably true; but it does not necessarily follow that half-a-dozen other men did not die. If it says that the ship got on shore, and after certain labour was got off, this may be accepted as true; but it is quite possible that the ship may have been aground on half-a-score of other occasions, about which nothing is said. During the War of the French Revolution the logs were much better kept, but ruled forms were not adopted till after the peace.

The Navy Board Letters go back as far the Revolution, and are interesting, as determining the establishments for guns, masts, etc., and reporting on proposed changes or invention. The Admiralty Minute Books and Secretary's Letter Books also go back as far as the Revolution, and within their province are the most authentic sources of information. They are, however, as might be expected, very meagre, and strictly official in their tone. For biographical purposes, the "Commission and Warrant Books" are of very great value. They begin in 1695, and show every commission or warranty given by the Admiralty. Many, as is well known, were given by the commanders-in-chief on foreign stations, and these, except when they had to be confirmed by the Admiralty, were not entered. Volunteers per order, or, as they were commonly called, "King's Letter-boys," were also entered, frequently with the name of the father or of the person by whose interest they were appointed.

Pay-books and muster-books were, in their essential features, what they still are; and so were Passing Certificates, with the exception that they lied most shamefully in respect of the candidate's age. By the instruction in force throughout last century, none were to be made a lieutenant who had not passed his examination; and the examining officers were to certify, among other things, that he had served six years at sea—two of which as midshipman or mate in some of His Majesty's ships—and was not under twenty years of age. It is familiarly known that these conditions were systematically evaded; that little boys in the nursery or at school were borne on the books of some ship, and the time counted towards the six years. It is, perhaps, not so well known that false certificates of age were frequently presented, especially towards the close of the century.

In the earlier years, the passing officers were content to say that "A.B. appears to be more than twenty." When they said that the candidate appeared to be twenty-six, or thirty, forty, or fifty, the presumption is that they asked the man his age and wrote down his answer; but "more than twenty" is always suspicious, and frequently meant fourteen or fifteen. Barrington, who was born in 1729, passed in 1745, and was duly certified to be "more than twenty." Nelson's was a very mild case. He was born on September 29th, 1758, and passed on April 10th, 1777, being in reality eighteen-and-a-half years. It was scarcely worth while telling a lie for eighteen months; but the custom of the age and its publicity seem to have been considered as rendering it innocent.

Later on, it became the custom to present a baptismal certificate, and some of these have puzzled me exceedingly. I have come across more than one case in which a baptismal certificate, duly signed—to all appearance—by the rector or vicar of the parish, has stated the candidate's age to be more by five or six years than—as I knew from family records—it really was. I had a reference made in one case to the parish register; but, naturally, there was no such entry in it.

It is only lately that I have found the explanation. In the autobiographical memoir of Sir George Elliot (the elder), he says:—

"In July, 1800, having completed my six years' servitude, I was sent with nine other midshipmen to London to pass the necessary examination for a lieutenant's commission. Our examinations before the old commissioners of the Navy were not severe, but we were called on to produce certificates that we were all twenty-one years of age—I was sixteen and four days. The old porter in the hall furnished them at 5s. a-piece, which, no doubt, the old commissioners knew; for on our return with them, they remarked that the ink had not dried in twenty-one years."

What I have now mentioned are the principal of the Admiralty Records. There are many others, all in their several degrees of importance, but of less general interest. There is also a most valuable set of Admiralty papers among the Home Office Records—correspondence between commanders-in-chief on foreign stations and the Secretaries of State, petitions, memorials, letters between Secretaries of State and the Admiralty, and such like. Among the Treasury papers and Foreign Office papers, naval documents of great interest are not uncommon. These are open to the public down to the year 1760; for a later date only by special permit. As a sample of what there is among them, I may say that the Foreign Office Records for Sicily, 1798, give the whole of Sir William Hamilton's correspondence from Naples at that time, including the history of the watering the fleet at Syracuse; which had remained secret for ninety years, when, armed with a special permit, I dug it out, and had it printed in the *United Service Magazine* for May, 1889.

It will be noticed that few—very few—of the Admiralty papers are of earlier date than the Revolution. I believe the meaning of this is that, during his long term of office, Pepys kept the correspondence in his own charge, and carried it off when he was dismissed, and sent it to the Tower. I understand that a great deal of it is now in the Bodleian Library. Some day I hope to be able to make a search there. What there is at the Record Office of an earlier date is either of the nature of accounts, or is embodied among the State papers, domestic or colonial, which are very fully calendared. These calendars begin with the reign of Henry VIII., and are continued, with two small, and now diminishing, gaps, to the Revolution. The original MSS. so calendared are, for the most part, in the Record Office; but some are in the British Museum, and most of those relating to the East Indies are at the India Office.

And now that I have given you some idea—necessarily very imperfect—of the vast mass of historical material which lies buried in the Record Office, I want to tell you of the attempt which is being made to render some of it accessible to the public. As it is, it is buried. There is much of it that has not been seen with eyes of understanding for 150 or 200 years. I myself have disturbed some of it, but what one man can do amid such a mass is extremely little.

Somewhat more than three years ago, in conversation with my old messmate, Rear-Admiral Bridge, then Director of Naval Intelligence, I was speaking of this subject—of the enormous quantity of MSS. of naval interest, not only in the Record Office and in the British Museum, but also in private hands, some of which are indicated in the reports of the Historical MSS. Commission, and suggested the desirability of getting some of it printed. In this he concurred, and as we had no idea that the Government would undertake such a work, the only way seemed to be to do it by subscription. I said that I had long had such a fancy, but doubted how far we should be supported. However, we agreed that the time seemed fitting; we were confirmed in this belief when, a few months later, a strong article suggesting something of the same kind—the formation of a society for reprinting rare naval books—appeared in the *National Observer*. I believe the author of that article was Mr. Hannay. I have since been told that a similar suggestion was made still earlier by Mr. Clowes. If so, it escaped me.

It was out of the conversation between Rear-Admiral Bridge and myself, supported by the article in the *National Observer*, that the project grew. Our idea was to form a society on lines similar to those of the Hakluyt and Camden Societies. We consulted some of the leading men in the Service. Sir Geoffrey Hornby, Sir Edward Fanshawe, Sir Vesey Hamilton, Sir Anthony Hoskins, and others, at once gave in their adhesion to the proposal; so also did many others, amongst whom I may name the late Sir John Seeley, Professor S. R. Gardiner, Prince Louis of Battenberg, the Duke of Norfolk, and Earl Spencer—then First Lord of the Admiralty—and our present chairman, the Marquis of Lothian.

This seemed sufficient encouragement, and we convened a meeting, which was held in the theatre of this Institution, on June 13th, 1893. We had then—that is before any direct steps were taken—fifty-six promises of support. In that meeting, with Rear-Admiral Bridge in the chair, it was resolved that such a society should be formed; and a committee was appointed to consider and report upon the details. Earl Spencer accepted the office of president; the Duke of Saxe-Coburg, and the Duke of York consented to be patrons; and in a meeting held on July 4th, 1893, with the Marquis of Lothian in the chair, the society was formally constituted as the Navy Records Society, and its objects were defined to be:—

First, the editing and publication of manuscripts illustrating the history, administration, organisation or social life of the Navy; Second, the reprinting of rare or generally inaccessible works of naval interest; Third, the publication of translations of similar manuscripts or works in foreign languages.

Rules for its governance were agreed on, and a council was elected.

At that time our numbers had risen to ninety-five, and were fast rising; every day, every post almost, brought us new accessions. It looked as if we had taken our tide at the flood, and were being swept on to the fortune we aimed at—a sufficient working income. We felt warranted in undertaking the publication of a first volume; and my offer to edit and bring out a volume of the “State papers relating to the defeat of the Spanish Armada” was accepted. It was found that these papers were more bulky than had been anticipated, and they ran to two large volumes; but before the second of them was ready our numbers had risen to nearly 400, and the immediate future of the society seemed assured.

Although I had the happiness of being the godfather of those two volumes, I am in no sense the author of them, and am therefore at liberty to speak of their success, of the interest they excited, of the new light they threw on a story which many considered old and well worn. It will henceforward be impossible for anyone wishing to pose as an historical writer, to repeat the transparent fictions which had grown up round the memory of our victory; and I may own to a peculiar satisfaction in squelching the myth of that thief and liar, that “most lewd man,” that “caitiff, unworthy of life,” David Gwynn; as well as to a feeling of triumph in settling the authorship of “Lord Howard’s Narrative,” in doing which I was largely indebted to Mr. Coote of the British Museum.

The society thus found itself fairly launched on the sea of endeavour. Mr. Hannay had undertaken to prepare for us a volume of Lord Hood’s private letters, written from the West Indies in the time of the American War of Independence; and Mr. Clements Markham had undertaken the life of Captain Stephen Martin, the brother-in-law and companion in arms of Sir John Leake, during the wars of William III. and Queen Anne. These were both issued during the last year, and with them an index to “James’s Naval History,” presented to us by Mr. Brassey, who also

most liberally defrayed the cost of printing. Of each of these three books the interest and the value are very great, and yet diverse.

The index to the "Naval History" is exceedingly useful, and I, who work a good deal with James, may say that it has already saved me many hours of tedious search after a name or an incident. "Hood's Letters" are on a totally different platform. They display a bitterness of temper which has struck many readers as at once unpleasant, and the distinguishing feature of the book: to me, on the contrary, it appears quite a subordinate matter; what strikes me in it is the tactical genius which peeps out from every line. If I may hazard a strong opinion, I should say that the discussion of Graves's conduct off the Chesapeake is the most remarkable exposition of tactical principles that has appeared since the publication of Nelson's celebrated memo. of October 9th, 1805; and it must be remembered that Hood's was written twenty-four years before Nelson's. Similarly, his criticisms on Rodney's conduct on the evening of April 12th, 1782, however bitter they may be judged—savage, if you will—are of extraordinary interest. May I read you a few of them? After describing how the "Ville de Paris" stuck to the "Barfleur" after ten minutes' close action, he goes on:—

"This was just at sunset, and my boat had scarcely got on board when Sir George Rodney made the signal and brought to, and to my very great astonishment continued to lie to the whole night. After the truly glorious business of the 12th, I was most exceedingly disappointed in and mortified at the commander-in-chief—in the first instance, for not making the signal for a general chase the moment he hauled down that for the line of battle, which was about one o'clock; had he so done, I am very confident we should have had twenty sail of the enemy's ships of the line before dark. In the next, that he did not pursue under that easy sail, so as never to have lost sight of the enemy in the night, which would most undoubtedly have enabled him to have taken almost every ship the next day I lamented to Sir George on the 13th that the signal for a general chase was not made when that for the line was hauled down, and that he did not continue to pursue so as to keep sight of the enemy all night, to which he only answered, 'Come, we have done very handsomely as it is.'"

When we remember the very intimate relations which existed between Hood and Nelson twelve years later, it is difficult not to suppose that Nelson often heard these criticisms of Rodney and of Graves, and that in his own criticism on Hotham, and in his own action at the Nile he was strongly influenced by the teachings of Hood.

The "Life of Martin" is, again, of a totally different character. Martin was not a master of tactics like Hood, nor indeed had he Hood's opportunities; but he knew the Service of his time, and has given us a lively and apparently faithful sketch of it. It may, of course, be objected that the life is not an autobiography, but written by Martin's son. It is, however, clear, on every page, that the son is closely following his

father's journal or letters, and the words as given by the younger man were first penned by the elder. Here, for instance, in 1694, years before the son was born, we have :—

“Mr. Martin had a commission to be third lieutenant (of the ‘Britannia’), but Lord Berkeley was so ungenerous as to put a younger officer over his head—one that had married his housekeeper. This, after his former disappointment, made him so angry, that he wrote a complaint to Lord Orford, challenged the lieutenant, and had obliged him to fight him if it had not been prevented.”

Put I or my or me in place of Mr. Martin, he, his or him, and I take it we have a transcript from Martin's journal.

The volume is enriched with pictures of the ships in which Martin served either as 1st lieutenant or commander. As pictures, they may, perhaps, be rightly described as “wooden.” The sea has a strong family resemblance to that in those wonderful pieces of wool-work I used to see on the lower deck; but the 1st lieutenant of a line-of-battle-ship, or the commander of a bomb, must have known intimately every rope and block about her, and the sketches, drawn by him, may be unhesitatingly accepted as correct representations of the rig of 1695-1700.

The society now numbers something over 500 members, and will be able to issue three volumes during the present year. One of these, the “Journal of Rear-Admiral Bartholomew James,” will be issued in two or three weeks, and will be found both interesting and amusing. As I have had a good deal to do with editing it, I may say that it might more properly be described as the Journal of James as mate, lieutenant and commander: it comes to an end with his promotion to post rank; but of his service in command of a battery under Cornwallis at York Town, in 1781, and again at Martinique and Guadeloupe in 1794, or as commander of the “Corso” brig under Lord St. Vincent in 1797-8, it gives a lively and interesting account. Here, for instance, is a short note of the defence of Fort Matilda in Guadeloupe :—

“On the part of the enemy, they were intent only on erecting and completing their works and batteries, while we were constantly employed cannonading them, and preventing all in our power their approaches. However, they effected about this time the cutting off our water, and kept us upon putrid tank water that had been there for many years as a reservoir and receptacle for rats and all kinds of filth and vermin; and no sooner did we begin to drink this water, but the garrison was seized with a severe flux that weakened our strength very considerably, and carried off a number of men, independent of the yellow fever.”

Here is another, of orders to prepare for sea :—

“The ‘Corso,’ which had just come in from a three months' cruise among the Canaries, was ordered to Lisbon chiefly to refit, get new sails and rigging, and be equipped for another cruise; and she was totally dismantled and unrigged, with her

sails on shore, and neither provisions, water, or wood on board, when, on the 14th, at eleven o'clock in the morning, my signal was made, and I was ordered by the admiral to sail for England with dispatches at four in the afternoon. Well knowing I was serving under an officer who would admit no excuse, I proceeded on board, and was as decisive to my officers and men as the commander-in-chief had been to me; and I shall only observe that at half-past three she was towed down the Tagus, taking in provisions on one side, water on the other, wood over the stern, and sails bending aloft; and that, on my receiving my dispatches from the admiral, he was pleased to say that I had exceeded his expectations and executed his orders with uncommon attention."

With the other two volumes which will be issued this year, I am less familiar. One, which is being edited by Dr. Tanner, of St. John's College, Cambridge, is a contemporary view of the Navy under Charles I. and Charles II., and will, I am sure, be interesting, both from the matter of the original discourses which I have seen in the MS., and from the ability which Dr. Tanner will bring to bear on the elucidation of them. The other, which is being edited by Mr. Oppenheim, deals with the Navy as it was under Henry VII. Mr. Oppenheim has, as you know, made a special study of the conditions of our Navy in early times, and I am looking forward to this book as the immediate follower and worthy successor of Sir Harris Nicolas' unfinished "History of the Royal Navy."

Of other works in preparation, it would be premature to say much. This I may mention: that Professor Elgar will edit for us, in fac-simile, a set of beautiful, coloured pictures of the ships of Henry VIII., drawn for and presented to the King in 1546; and Professor Gardiner will edit the papers relating to the Dutch War of 1652-4, a work which will certainly, to some extent, modify our opinion of Blake. There are many others: I myself have undertaken to prepare a miscellaneous volume of courts-martial, letters, memos, and such like, illustrating the social life and discipline of the Navy in the eighteenth century. I believe it will be important: I am quite sure it will be interesting and amusing.

This, then, is a short outline of what the society has done, and of what it proposes to do. In the two years of its active life it has already justified its existence, and has published five books of great value. Supposing it to continue as it has begun, or—which is the more business-like way of putting it—supposing subscriptions to come in to the same or greater amount, by the end of ten years, the history of our Navy will stand on a very different footing from what it does now. Those of you who are here fifty years hence may say to our grandsons or great-grandsons that what they know of the art of naval war, and of the glories of our country, they owe to the Navy Records Society.

Admiral Sir E. G. FANSHAWE, G.C.B.: Merely as a preliminary to the discussion which I hope will take place on this interesting lecture, I think it would be well to recall the enormous advance that has been made in the

country and in the naval profession in knowledge of the history of the Navy during the last thirty or forty years. If we reflect upon the state of opinion and knowledge that existed at the time of, and even after, the publication of "James's Naval History," and how we naval officers looked at that work as a satisfactory and complete history of the Navy; and when we remember how in 1860 that patriotic and great statesman, Lord Palmerston, was induced to recommend to the country and to obtain from Parliament a vast sum of money for fortifications for the defence of the country (which was then, it must be admitted, in a very unsatisfactory state), we shall realise that there was a want of historical knowledge which is now hardly conceivable. I do not recollect that the voice of the Navy was much heard in that discussion, though there may have been here and there someone who said that it was the Navy which was not strong enough, and this, although at very nearly the same time it was found by the Foreign Minister, Lord Russell, that the French Navy was rather superior to our own in line-of-battle-ships. But at the time there was not, I think, a naval voice showing that the Navy ought to be increased that was listened to in the country. That is an instance of the state of ignorance in which the country was within thirty or forty years of the present time. I think our lecturer has shown very good reason why that should be so, in the extreme difficulty of getting information upon which any continuous and exhaustive history of the Navy, going back to the principles upon which its action was conducted, could be obtained. Now, thanks very much to the researches of our lecturer, Professor Laughton, whose exertions to gain information and to publish it have been most extraordinary, and thanks also to the exertions of some naval officers and others, the subject has been by main force brought before the country. I can recollect when Sir John Hay, who always took a very active part in endeavouring to urge the Government to increase the Navy, pointed out in Parliament that the Navy was not in the condition it ought to be in, the only notice that the greatest newspaper in the country, *The Times* (which, of course did not then know anything more about it than anybody else), took of Sir John Hay's eloquent representation was to remind the gallant officer that Lord Nelson was not afraid to fight the battle of Trafalgar with an inferior force. At the time of Trafalgar, the English Navy was vastly superior to the whole of our enemies, French, Spanish, and Dutch, put together, but our interests were enormously greater in all parts of the world, so that it is very true we fought the battle that everybody knew must take place somewhere not very far from the chops of the Channel with an inferior force. Now, carrying our eyes back, with the assistance of Professor Laughton, Admiral Colomb, Captain Mahan, and others, we can trace the causes of our superiority in the long run, notwithstanding many failures and many mistakes. There is a history—a history which gives us first principles, and we know that those first principles are constant and do not change. The country did not know that thirty years ago, and I do not think the Navy, generally, knew it. The last step in this retrospect is taken by an intelligent and able student of naval history, Sir Vesey Hamilton, who has carried us back as far as the reign of Offa, the powerful king of Mercia, who, being threatened by Charlemagne with invasion, got together a fleet, which was strong enough to induce that powerful monarch to embrace his friendship instead. He was a man bred in England, and ruled an inland kingdom, but he knew the proper way in which this country was to be defended from a powerful enemy, and he took to the sea. I simply offer these observations in the hope that they may induce further discussion.

THOMAS MILLER MAGUIRE, LL.D.: I should be very loth, indeed, as an outsider, to enter into a professional discussion, were it at all of a technical or scientific character. It appears to me, however, that this is not so, but that the paper is of an historical and academic character; and, therefore, I trust the members present will excuse me for interfering in the matter. The lecturer at the beginning of his exceedingly instructive and most interesting disquisitions dwelt

on the neglect of the study of naval history among naval men. I wish to emphasise that. I do not know much about the neglect of the study of British Naval History among naval men, but I do know, unfortunately for myself, a good deal about the neglect of the study of British History altogether in all kinds of schools in England. I think that neglect is a positive disgrace to the country. It is a discredit to schoolmasters, and it may possibly be a danger to the country, as I will point out in a few moments. It is not merely the history of the Navy that is neglected, it is the history of our Colonies, of India, of our Army, of our Commerce, and of everything that differentiates our nation from other nations. There are many young men, the *crème de la crème* of our youth, from whom our statesmen are to be taken, who will lead our electors, coming from the best schools in the country, and yet absolutely ignorant of the very matters which it is most material that they should know as future leaders of our race. Our naval officers cannot be blamed for an ignorance of naval history, any more than our military officers for an ignorance of military history, or our politicians for ignorance of political history. They are not taught these things at the only time when young men can properly learn them, that is to say, between sixteen and twenty years of age, for when they become immersed in the arduous pursuits of professional life it is too late for them to learn these subjects. Now, is not it an extraordinary thing, to take my own case, that I was actually obliged to learn off by heart all the little nautical incidents of the Peloponnesian War, to study the tactics and carrying power of the vessels of the Carthaginians and the Romans, but no one ever dreamt of telling me anything about Hawke, or Boscawen, or Collingwood, or our other naval heroes. The thing is preposterous on the face of it, and I am very much obliged to gentlemen like Professor Laughton for what they have done. When I was at college we could give the names of every distinguished consul and proconsul of the Roman State, but we knew nothing at all about Lord Mornington or Lord Dalhousie in India; we were taught all about Scipio Africanus, indeed about all Scipios, but we knew nothing about Marlborough, and yet we were far better taught than the present frequenters of upper-class schools. Therefore, I rise to protest against the neglect not only of naval history, but of all our history, and I say it may be a very great danger. The lecturer has pointed out that when Captain Mahan published his book, the public at large neglected it. I must say that the gentlemen with whom I am connected did not neglect him. We recognise the great service that he has done for us in making the principles underlying the battles clear, and in that respect I think his service to the British nation has been invaluable. He has not only taught us the principles of naval strategy, but he has written three volumes, absolutely constituting a monument far more lasting than brass, and containing the noblest tribute that has ever been paid to the skill and self-denial of our people and the bravery and strategy of our naval officers. There are other most clear and most interesting works like Colomb's and Wilson's, but Mahan's is of most service to a public lecturer. If anyone goes on a public platform and begins to talk patriotism based on English books he is laughed at as a Jingo, but when he can say "I am not quoting from English Naval Histories, but I am reading from an American Republican Officer's Naval History," then the people in the gallery are quiet. Now, I am such an admirer of Captain Mahan as to carry a document about with me in my pocket containing a large number of quotations from his work. These are a series of political summaries and examples of points connected with the Navy. Will our democracy live up to our past? is sometimes the question. I hope it will, and at present it is certainly trying to do so as honestly as it can. He says in one of his books:—"Whether the sea-power of Great Britain will suffer from the change in the political condition remains to be seen. The broad basis of her sea-power still remains in a great trade in large mechanical industries, and in an extensive colonial system. Whether a democratic government would have the foresight, the keen sensitive-

ness to national position and credit and willingness to insure its prosperity by an adequate outpouring of money is an open question." And now I say it will be no open question if our rulers are properly educated, if only our schoolmasters teach young men to be enthusiastic about the records of the past of their country, naval, military, and commercial, and political. Prince Bismarck when he found that some recruits of the 3rd Army Corps had entered the Prussian Military Service in absolute ignorance about the campaigns of Frederick the Great, said: "Woe betide the Brandenburg schoolmasters if the next batch of recruits be equally ignorant!" I would say of all kinds of teachers: "Woe betide them if every Englishman of eighteen years of age does not have a very fair knowledge of Nelson and his compeers, and of Marlborough and his period, and similar matters in our history! We have now no excuse for not knowing something about Naval History. I defy a man capable of understanding any book not to understand the three volumes of that great American. This is the first time that I ever had the privilege of seeing the lecturer, but I have spent a considerable portion of my time in reading his efforts in the past, and judging from the very ample programme that has been put before us I shall have to spend a large portion of the remainder of my life in reading his efforts in the future. There are two other books that I would refer to: one is that very admirable book on "Ironsides in Action." I must say I opened it with fear and trembling, because I did not think it could help us, but I could easily understand everything Wilson says in his book. I see before me on my left another gentleman whose book I have been reading. I mean Admiral Colomb's "Naval Defence." It is perfectly clear and intelligible from start to finish. I say these or similar treatises should be in the curriculum of every first-rate school in England, and our education will be defective until they are included in such curricula. I want to get gratuitous information from Admiral Colomb in regard to the history of the past as indicating the history of the future. My questions are these, addressed to the gallant admiral: Is it the case that no material alteration has occurred in strategy owing to the new machines, the use of coal and iron, and the fact that a modern ship-of-war is more like a big factory than anything else with its complicated machinery and engineering appliances? The next thing is whether, in the event of strategy being changed at all, the change is not to our benefit, as we have a greater advantage compared with other nations in our possession of abundance of coal and iron supplies, and in the ingenuity of our engineers—whether, if there be any change, the change is or is not to our advantage? Thirdly, I would like to ask him whether the battle of Lissa was not won by men rather than by machines, and whether it is not the case that recent actions in American and Chinese waters prove that now as in the past "the moral is to the physical as three to one"? And if the moral is to the physical as three to one, whether, if we educate our democracy and aristocracy and every other class of the community in patriotism we may not expect to be in the future as triumphant as we have been in the past?

Vice-Admiral P. H. COLOMB: Perhaps it would be convenient if I were to endeavour to answer to the best of my ability the questions which have been put to me by Dr. Maguire. My individual opinions may be right or wrong, but Dr. Maguire knows, I think, that I have given a certain amount of trouble to forming them before I venture to express them. I think if the torpedo does not have a remarkable effect shortly there is nothing to make the conditions of naval strategy now different from what they were in the past. I think also if the torpedo does make a great change, that we should find that it would be only the weapon that was altered, but that conditions of strategy would accommodate themselves to that weapon and remain just as they were before. My strong impression is that the advent of steam has doubled the possible naval power of this country. It has made naval warfare a certainty where it was before greatly a matter of chance, and I cannot see that any changes in prospect are likely in the

slightest degree to disturb that position. But then I rest a good deal in those opinions upon the strong belief that Dr. Maguire has expressed as to the moral power being three to one of the physical power, and I cannot help saying—I hope having discharged my mind of all prejudice—that the moral power, as far as we can judge in peace-time, of the British naval officer—whether from training, whether from the method of law in other countries, whether from the greater freedom which a British naval officer undoubtedly possesses—is, as a rule, far above that of most other countries. And I cannot help believing that in modern battles—I think it was shown strongly in the battle of the Yalu—that the necessity for the moral power, for coolness of head above all things, for the steadiness of nerve and phlegmatic power which resides in Englishmen, combined with that kind of eagerness which they display to act and to think at the same time, has been strongly demonstrated. Alluding to Lissa, I quite agree that the battle was lost by the moral failure of the officer in command. Now, I have exhausted so much of my time in answering these questions that I must say very little upon the general part of the lecture. But I think we all recognise, everyone of us, who has gone into this question of naval history, that we are, to a great extent, only followers of the lecturer. I think he is the pioneer in this country of the whole subject from beginning to end, and I venture to say that in the Naval Estimates of this year he sees a great deal of the fruits of his labours. With regard to the Greenwich lectures, he has alluded to me as having followed him there; he also spoke of the late Sir Astley Cooper Key's share in what was done at Greenwich. Now, Sir Cooper Key, in his original programme intended to have had a Professor of Naval History at Greenwich who would have been, as I understand it, in a similar position to that which Captain Mahan occupied in America. I cannot help thinking if that view had been carried out something like Captain Mahan's book might have been produced in this country, although I quite agree with Dr. Maguire that it would not have had so much effect on the public as the work coming from America has had. I think I ought to repeat what I stated in this theatre not long ago, that Captain Mahan wrote to me before the publication of his first volume and said that the whole subject had been brought to his notice by papers read in the theatre of this Institution: and I suspect he had in his mind at the time some of these papers of the lecturer's. I quite agree with the lecturer in nearly all that he said as to the difficulty of getting at the bottom of things in records of naval history—the incorrectness of so many of the histories and the great labour that is exhausted in trying to fit in different statements. I am sure that the history even of the battle of Trafalgar has not yet been written, that the descriptions of it, even the diagrams which were nearly contemporary, cannot possibly have been correct, that they disagree strongly with the plain facts either in the logs, or despatches, or letters that were written at the time. The best diagram I have seen, the nearest to what is probably the truth, is one published in the *United Service Magazine* a few years ago, which a gentleman discovered in Dublin; and it was evidently of very early date. Speaking just for a moment of the way in which history is written, and especially naval history, and of the difficulty of getting at the facts, all the historians who have ever written about the attempt of Hoche on Ireland have distinctly said that Colpoys, who was supposed to be blockading, was driven off by a gale of wind, and that that was the reason why the French ships managed to get out. Now, that gale of wind did not come on until ten or twelve hours after the French fleet had escaped, and you do not find that fact mentioned anywhere, except at the Record Office, in the logs of the ships which were there present; and to make quite sure of that you have to examine a good many of the logs, because of the discrepancies amongst them all, to find out exactly where the ships were and what they were doing at the moment the fleet came out. I want, before I sit down, to corroborate what the lecturer has said about the extreme facilities which are given to you at the Record Office, and the great civility which is extended to you, and how easy it really is to get any document

you want if only you know, as the lecturer says, what it is you want to ask for. I think the country will owe to Professor Laughton a strong debt of gratitude which will last for many generations to come for the thought and the action which produced the Navy Records Society. I am sure that that must have upon the country the greatest possible effect in keeping it up to the mark and getting it to understand its true position. I cannot help thinking that military men ought at this particular time to give a good deal of study to their military history in connection with the Navy, rather putting aside that larger study which they are giving to all the great battles of the Continent, because, after all is said and done, the work of building up the Empire has been done by the Army and the Navy in conjunction, and it is absolutely necessary, I think, that the Army should know as well as the Navy the details of the methods by which that work was done.

Admiral Sir ERASMUS OMMANNEY, C.B., F.R.S.: I gathered from the lecturer that he made reference to great discrepancies in naval history in various despatches and various records, and a similar statement has been made by Admiral Colomb. Having served in the battle of Navarino, I cannot avoid quoting a very glaring instance of a most erroneous statement by a commander-in-chief of the allied fleet at the destruction of the Turkish fleet in Navarino Bay, 1827: in his despatch he states that we sailed in the order of two columns into the action, it *was not so*—by his own arrangement the fleet was in line of battle, the English squadron leading, in our wake followed the French and then the Russian in the rear in close order, eleven ships of the line altogether. No doubt there are many other instances of naval history in which discrepancies have also crept in. I listened to the lecturer with very great satisfaction, and I only wish I was ten or twenty years younger to follow up the course of study which Professor Laughton has laid out. I hope that the lecture will be put into the hands of all the rising generation, and that they thereby will be incited to follow out the study of history recommended.

Lieut.-Colonel T. H. BAYLIS, Q.C., late 18th Middlesex V.R.: I should be very glad to ask one short question, and that is: Have foreign Governments given us facilities for obtaining information? As has been observed by Admiral Sir Erasmus Ommanney just now, the difficulty is to get at facts. He has told us of an engagement at which he himself was present, viz., Navarino, 1827, about which, as he has told us from his personal knowledge, the facts were misrepresented. The lecturer has already told us facilities are now offered by our Record Office which were denied before. I cannot help thinking that foreign Governments might follow the good example which has been set by our Government, especially as time goes on and there is not that danger with regard to giving information. The lecturer has alluded to courts-martial, and you will excuse me as a military man, and as a lawyer, and as a judge, for rising to say that I know how extremely difficult it is to deal with evidence, and the contradictions that one meets with over and over again in courts of justice. If, however, we could get to hear both sides, to compare statements which have been furnished by our admirals with those furnished by admirals who have been engaged on the side of the French and other Powers, probably we might arrive at something like the truth. I would, therefore, ask whether the Governments abroad have given that facility which they may now have themselves from our Government and our Record Office?

Admiral OMMANNEY: Following what I said just now, I would add how much it is to be deplored that after a general action the commanders-in-chief do not call upon their captains to record all the facts that have occurred on board each ship, either the next day or as soon after the battle as possible.

Captain F. M. LOWE, R.A., Instructor, School of Gunnery, Shoeburyness: As a member of the Navy Records Society, I wish to ask the lecturer a question, and, before doing so, I should like to add a military quota to the naval testimony that has been given, as to the untiring courtesy of the officials at the Record Office in giving every information that is possible. My question is: Is there any hope that the naval and military history of this

country which is now locked up in the libraries of the Universities may be made, in the future, easily accessible to the public? I understand that in some cases there is great difficulty in getting access to any such records.

Lieutenant HENRY CHAMBERLAIN, R.N. (Retired): The interest in sentiment is one to be cultivated, and I feel sure the Naval Service wishes it to be encouraged. Our sister Service (quite within the last few years) has removed things which tended towards sentiment, no doubt with the best of objects. It is not for me to say whether the object is good or bad; but, I know, by conversing with soldiers, they regret that everything conducing to sentiment is being gradually abolished. In the Navy, ignorance concerning naval history could be reduced to a great extent if on board each ship (let us take the "Agamemnon," for instance), in some conspicuous spot, were placed a notice containing the record of former "Agamemnons," as far back as we could trace them. The men would get to take a pride in *their* "Agamemnon," and so on right through the Service. My object in rising is because I know that there are admirals present who will, perhaps, have the ear of the Admiralty, and that, in time, we may hope to see these little things done which will encourage sentiment and, consequently, increase the vital force of the Navy. In time, also, we may hope to see one flag on board each ship, which will be the "ship's colours," just like the "regimental colours." On that flag will be worked the names of the actions in which a vessel of her name took part; just as the regimental colours possess the names of the actions in which the regiment took part.

Professor LAUGHTON: I am glad to find that after talking for an hour I have not raised any point that seems to meet with disapproval. We have all probably heard the argument that Sir Edward Fanshawe referred to: that as Nelson won Trafalgar with an inferior force, it is, therefore, unnecessary—un-English, in fact—to provide a superior one against any future enemy. People forget, or do not know, that previous to the battle, Nelson was writing almost every day, begging, urging, the Admiralty to send him more ships; he did not want, he said, to win a battle with inferior numbers; that would be honourable, but would not have the effect of bringing Napoleon to his marrow bones. "Numbers only can annihilate; therefore, we must have numbers." What Dr. Maguire said about the general neglect of the study of history—not of naval history alone, but of all history, and especially of the history of England in relation to her own Colonies and dependencies—I know to be most true. As Professor of History at King's College, I am unhappily too well acquainted with the surpassing ignorance of the average young man. As to the appreciation of Captain Mahan's work, I was very glad indeed to hear what Dr. Maguire said, but I believe I was strictly correct in saying that at first the sale of "The Influence of Sea-Power upon History" was disappointingly slow; though I think it highly probable that it has been satisfactorily quickened since the publication of "The Influence of Sea-Power upon the French Revolution and Empire," which had a more immediate success, as having a more especial interest for readers outside the Navy and Army. To the general public, the most important interest lies in the second of these last volumes on the French Revolution, where the author has treated of the great struggle between the sea and the land; the struggle, in fact, between the Orders in Council and the Berlin and Milan decrees. With regard to the threat, if it may so be called, which Prince Bismarck is described as having held out to the Brandenburg schoolmasters, I wish some power would suggest something of the kind to the London School Board and the School Boards throughout the country. The number of boys who are turned out every year from the board schools, absolutely ignorant of the great deeds of our forefathers, which have made England what it is, is absolutely appalling. Colonel Baylis asked as to the facilities for getting at the French Records. On this point I have no direct knowledge; but I may say we have amongst the members of the Navy Records Society a very able young French student who is editing for us a volume of

papers relating to the little war with France in 1512-13; and in that he is incorporating the French papers of the time. French naval writers have not, as a rule, gone much to the original records; they have preferred the Chauvinistic reports ready to hand; but Captain Chevalier, in his three volumes on the Wars of American Independence, of the First Republic, and of the First Empire, has worked very largely from original materials, and in that way these books have very exceptional value, quite independent of his charming style. I take it that if Captain Chevalier was given access to the records, similar facilities would be given to any properly qualified person.¹ Captain Lowe has asked about the facilities at Oxford and Cambridge. There is a considerable quantity of naval material in the Bodleian Library at Oxford, to which, I believe, access can be had without difficulty. My impression is that any member of the University or any person satisfactorily introduced can obtain admission.

Captain LOWE: Not at Magdalen.

Professor LAUGHTON: Magdalen College at Cambridge is a much closer preserve, of which the Navy Records Society has had an unfortunate experience, having been refused—with every possible courtesy, I must say, but still refused—permission to reproduce some most interesting pictures of the Navy of Henry VIII.'s time, with the result of seriously limiting the work which Professor Elgar is preparing for the Society. In other instances, permission has been readily given; and the text of the "Discourses on the Navy in the times of Charles I. and Charles II.," which Dr. Tanner is editing for the Society, is taken from manuscripts at Magdalen, one of which, as far as we know, is unique. The fact seems to be that the position of Magdalen College with regard to the Pepysian Library is, in some respects, peculiar. The Library is rather a Trust than a possession, and the college authorities are perhaps nervously anxious as to the sacred nature of that Trust. They do not quite know how far their powers extend, and like Lestock in the action off Toulon, when they do not understand, they think it safest to do nothing.

The CHAIRMAN (The Marquis of Lothian): Before we separate I should like to say one or two words. I am sure you will all thank Professor Laughton very much—in fact he has been already thanked by those who have spoken, for the lecture which he has delivered. There are two points which have been mentioned to which I should like to briefly refer. One is the suggestion of Lieutenant Chamberlain, that the records of individual ships, bearing the same name, should be placed upon those ships, so that they might add a sentimental value to the name of the ship amongst those who are serving in her. I know in one case it has been already done. I refer to the "Royal Sovereign." In a very conspicuous part of that ship there is placed a record of the dates of the principal actions in which the previous "Royal Sovereigns" have been engaged. No doubt the suggestion is an excellent one. I do not know if that is the only ship in which it has been done, but if it is so, I hope that that plan will be carried out throughout the Navy. Then, with regard to the other point, that which Professor Laughton has explained to you regarding the action of Magdalen College, Cambridge, I do trust very sincerely that, the question having been raised here will induce the authorities of Magdalen College to alter their decision. I feel rather strongly upon that point, because, under proper safeguards, I think records of that description, very valuable from the public point of view, when they are placed, although private property so to speak, in a *quasi* public library, should be held as a public trust. It is evident, also, that the multiplication, even to a limited extent, of such documents is a safeguard against those risks which may occur at any time, such as the risk of fire, or other risks. If anything was to occur to Magdalen College, these drawings, invaluable

¹ I ought to have added that in the volume on the Dutch War, Professor Gardiner will give the Dutch as well as the English papers.

as they are, would be absolutely lost to the world for ever. I am quite sure that the Navy Records Society, or any other society asking for their use for publication, would be only too glad to show their appreciation of any permission which might be given in any way desired and also probably to limit the number of copies which might be distributed so as not to make them too common. Upon the general question, Professor Laughton's lecture, interesting as it has been, has led up to one point in the end, viz., the work of the Records Society. Of course, I am quite an outsider, but I have taken a great interest in the Records Society from the beginning, and for this reason. Records of Army campaigns exist in very large quantities—whether they are accurate or not, the records exist—but of the naval history of England there is almost practically none. I think the reason is not very far to seek. Of course a military campaign is carried on in a limited area, it has a definite object in view, its work is understood more or less beforehand, and it is carried on until the campaign is brought to an end either by victory or defeat. But as far as the Navy is concerned, although it is perfectly true that isolated engagements in different parts of the world, either by large numbers of ships or individual ships, may all tend to the common good, viz., the benefit of the country for whom they are fighting, the individual actions are so much scattered that it is very difficult to collect them into one continuous history in the same way as can be done with an Army campaign. The very fact that all the records we have and all the different stories we have of different naval engagements being so much scattered, make it essential, I think, that some society like the Navy Records Society should be in existence for the object of collecting together all the records that it is possible to obtain. I hope very much that the membership of that society will increase very largely, not so much on pecuniary grounds, although that is a great advantage—for the more money we have in hand the more publications we are enabled to undertake—but, because it is natural that when people subscribe to a society like this, they will read its publications, so the more members there are in the society the more will the knowledge of the naval history of this country be improved. The great object, apart from the question of education, which is to be looked forward to in increasing the knowledge of the naval history of this country is that in the future we may not be subject as in the past to sudden nervous attacks as to our weakness, or, on the other hand, to too great reliance upon our strength. If the knowledge of naval history was more universal, we should not be liable to those fluctuations that we have all seen within a very short time. I think I need add nothing further, except on your behalf to thank Professor Laughton very much for the lecture he has been so good as to give to us.

THE FRAMING OF ORDERS IN THE FIELD.

*By Lieutenant-Colonel G. F. R. HENDERSON,
The York and Lancaster Regiment,
Professor of Military Art and History, The Staff College.*

Friday, April 10th, 1896.

Lieut.-General Sir F. D. MIDDLETON, K.C.M.G., C.B.,
in the Chair.

PART I.

THE grand maxim of war is to establish superior force, moral and physical, at the right place at the right time. Simple in conception, the difficulties which attend its execution are enormous. It is to overcome these difficulties that armies are organised and disciplined; that generals are educated and soldiers trained; it is to this end that the vast preparations of peace are directed. And, as you are well aware, it is by no means possible to make these preparations thorough and complete. Every army has its peculiar deficiencies; and these deficiencies, probably without remedy, are all obstacles to mobility, that is, to the swift and certain application of the maxim.

Deficiencies in preparation, however, are of less moment than the difficulties inherent in war. We have historical examples of ill-trained and ill-equipped levies defeating veteran and well-appointed armies. Regular soldiers have before now been worsted by troops who knew little of drill and less of discipline. "For the conduct of an army," writes von Moltke, "character weighs more than knowledge and science." There are leaders whose will and energy triumph over all obstacles; leaders who, despite the shortcomings of their troops, find the means of massing the larger numbers at the decisive point; leaders who can inspire their men with their own spirit of resolution, and make that spirit the substitute for long training. Such men are rare. They are not to be found in every garrison. They are the born leaders of men, they are not to be manufactured, and they are exceptional even in the most military of nations. Yet even with such men the hardest part of their enterprise does not consist in moving their troops rapidly and in order, in feeding and

supplying them. Even with comparatively raw soldiers, the born leader will find the means of keeping his ranks full, of making long marches, and of seasoning his men to hardships.

But full ranks, long marches, and hardy soldiers, are not sufficient to ensure the concentration of superior force at the decisive point. Nor is generalship sufficient. A leader may have the penetration to select the decisive point, and set his columns in motion in the right direction long before the enemy perceives the manœuvre. But the recognition of the correct objective, even if followed by rapid movement, is not in itself sufficient to ensure success. The strategy may be sound, but if the tactics are not skilful victory may easily escape. And it is when the sphere of tactics is reached, that is, when the hostile forces come into touch, that obstacles present themselves at every step; it is then that the friction inseparable from the movement of armed masses begins to assert itself with all its disadvantages. Whether on the march or in battle a commander, even of a small force, cannot be everywhere. He cannot handle his army as he handles his sword, communicating simultaneously to every part the impulse of the moment, and controlling the entire mass by a word or signal. He is compelled to act through intermediaries. Even a small force is parcelled out into detachments. Advanced, flank and rear guards, frontal and flank attacks, must for the time being entail the separation of some portion of the force; and with larger numbers, both in movement and in attack, a division into several columns is inevitable. Moreover, when forces are composed of the three arms, each of these, notwithstanding that their functions are entirely distinct, must, if success is to be won, be employed in the closest combination. Then only will that moral strength, which each arm derives from the support and presence of the other, be concentrated at the decisive point. To bring about this combination is the task of the commander, and it is a task which few, even of the greatest generals, have satisfactorily accomplished. Even with the very smallest force the commander would find it difficult to personally direct every movement throughout the ever-varying phases and unexpected vicissitudes of a hot action. With a larger force each one of the three arms must have its own leader; and each of these leaders, as none is independent of the other, but all working together for the attainment of a common aim, must not only know what that aim is, but must know in what manner he can render the most effective assistance to his colleagues. And so, on the march, the separate columns must be informed for what object they are moving; advanced, rear, and flank guards cannot be left wholly in the dark. If they are so left and the enemy makes some unexpected movement—and in war it is the unexpected that always happens—it is not always possible to send back for orders. Events, when troops are in close contact, develop with astonishing rapidity, and it is often absolutely essential that the commander of a detached portion of the force should act with rapidity and energy. To send back to the general-in-chief and to receive his instructions takes time, and the time thus employed, although no more than fifteen or twenty minutes,

may be the critical moment of the engagement. "It is always those quarters of an hour," said Napoleon, "that decide the issue of a battle." But, if the aim of the commander, the manner in which he intends the three arms should combine and the several portions of his force co-operate, are already known to the subordinate leaders; if his intentions have been so clearly expressed that no doubt remains in the minds of any one of those leaders as to what is proposed, then energy will take the place of hesitation; quick decision and rapid action will forestall the endeavours of the enemy; opportunities will be utilised, and combination, so far as is possible, will be assured.

It is by the clear enunciation of his intentions, of his object, of the combination by which he proposes that this object should be attained, in one word, by his orders, that a general impresses his single will upon the mass of individuals he commands; that he enlists their activity and resolution; that he provides against emergencies which may occur when he is unable to intervene; that he saves time, and secures the concentration of superior force at the decisive point.

It is, I believe, in great part by this means that even with ill-trained troops the born leaders of men have achieved extraordinary results. A little reflection will show us that this is no far-fetched assertion. There can be little question, I think, that their orders were the reflection of their own personality. The most marked characteristics of such men are the clearness with which they see both the end to be achieved and the best means of achieving it; and it is impossible but that these characteristics should find expression in their orders. History, unfortunately, concerns itself but little with the means by which many of the greatest captains set their troops in motion, infused harmony into their action, and combined their efforts in one powerful blow. Of the battle orders—those issued whilst the fight was hottest, and which turned the fortunes of the day—even of the greatest generals, we have but few examples. And yet we know that they were recorded. We know, for instance, that at Salamanca, Wellington initiated one of the finest combined movements in the whole history of war—the great counterstroke of 30,000 men, cavalry, artillery, and infantry in closest concert—by means of scraps of paper on which he had hastily scribbled his instructions. But these scraps have vanished. The many volumes of the Wellington despatches contain no trace of them; and yet, written as they were in the midst of fierce excitement, involving as they did that most complicated of manœuvres, a simultaneous frontal and flank attack, and the combined action of large masses of the three arms, they would hardly yield, either in interest or instruction, to any one of the innumerable documents which have been religiously preserved. One may imagine the anguish of an ordinary soldier, suddenly called upon to write, in the space of a few minutes—for that was all the time available—orders for the advance, in battle order, of six divisions of infantry and three cavalry brigades. What a revelation of character and capacity these orders of the Duke's would be!

The battle orders of generals who conquered on less famous fields, and with armies of different character, have disappeared more completely

than those of Wellington or Napoleon. We have at least the preliminary orders, laying down the plan and the dispositions which led to some of the greatest victories of these two great soldiers. But the orders of Cromwell, of Clive, of Peterborough, of many of the great men of action, who won their victories with armies hurriedly improvised and weak in organisation, have vanished altogether. Yet, as I have said, these orders must have been the mainspring of their successes. To take for instance the orders of Cromwell. We may judge what they must have been from his letters; and in his summary of the style of these letters, Carlyle has exactly described the characteristics of a good military order. "They were written," he says, "most of them in the very flame and conflagration of a revolutionary struggle, and with an eye to the despatch of an indispensable pressing business alone; but it will be found, I conceive, that for such they were well written. Superfluity, as if by a natural law of the case, the writer has had to discard; whatsoever quality that *can* be dispensed with is indifferent to him. With a great solid step he presses through towards his object; has marked out very decisively what the real steps towards it are; discriminating well the essential from the extraneous; forming to himself, in short, a true, not an untrue, picture of the business that is to be done."

Again, let us turn to a general who was in some respects the prototype of Cromwell, as chary of speech, as swift in decision, as unerring in recognising the true objective, as resolute in action, and as trusted by his men. Stonewall Jackson had no staff training. He had served but six years in the Regular Army of the United States. He had been ten years a professor of mathematics when he joined the Confederate Army, and he was almost immediately promoted to the command of a brigade. And yet Stonewall Jackson's orders for battle were in every essential respect a model. They were very short, not to say abrupt; but they were exceedingly clear. They left no doubt whatever as to the intentions of the general-in-chief. They entered into no details, except when details were absolutely necessary. Commanders of divisions and brigades, of the advanced cavalry, of advanced, flank, and rear guards, were given a perfectly free hand as to the disposition of their troops, and they were expected in case of emergency to act on their own initiative. The only unpardonable fault in Jackson's eyes was to do nothing under plea of waiting for orders. To an energetic and active subordinate, even if he were sometimes led into errors of judgment, he forgave everything. His orders, moreover, whenever possible, were given to his lieutenants in a personal interview, where questions could be asked, explanations given, and all doubts removed; and to this systematic method of directing his troops his wonderful success is in no small measure to be ascribed.

It may be noticed that the chief points of Jackson's orders were their clearness, the impossibility of mistaking either the aim or the means, and this is characteristic of all great leaders. Lucidity of thought is the most marked attribute of a mind above the common. Most men of action have found the means of expressing their thoughts with the same distinctness as those thoughts present themselves to their own minds,

and on the minds of their hearers they have therefore been able to impress "a true picture of the business that is to be done." In the Wellington Despatches and the Napoleon Correspondence there are innumerable examples of orders and instructions to subordinate generals; and in each one of these, whoever examines them closely can hardly fail to be struck with the simplicity yet completeness with which the ideas are explained, and with the sharp outline of the purpose to be achieved. The same may be said of the orders of von Moltke. Nor is it without interest to note that Nelson's orders were no less graphic and perspicuous than those of Wellington and Napoleon; that they display in every line what Captain Mahan calls "the transcendent merit" of trusting subordinates, and that they paved the way to the triumphs of the Nile and of Trafalgar.

PART II.

It has been said that "few appreciate the real extent and importance of the influence which language has always exercised on human affairs, or can be aware how often these are determined by causes much slighter than are apparent to the superficial observer." This reflection may be applied with equal truth to war. Battles have been lost simply and solely because a single order has miscarried; because instructions have been misread; because the intentions of the commander were not understood; because orders have been insufficient, vague, or careless. An instance of deep interest to English soldiers is the extraordinary blunder of one of the Russian columns at Inkerman. It had been ordered to attack the right and centre of the position, and to ascend to the heights by the *left* bank of the Careenage ravine. It ascended, however, by the *right* bank of the ravine, which was on its left. In consequence of this blunder two columns found themselves on a narrow plateau, unable to deploy, and were compelled to engage the English lines in close column. Again, referring to the same campaign, there can be little doubt but that to a badly-worded order the useless, if heroic, sacrifice of the Light Brigade was due.

The war of 1870 is not without examples of indifferent orders. Those of the French, although exceedingly detailed, were seldom adapted to the situation. The very first battle of the war throws a curious light on the relative efficiency of the staffs of the hostile armies. On the 3rd of August, Marshal MacMahon, from his headquarters at Strasburg, directed General Douay's division to take post near the frontier town of Weissenburg, thirty miles distant. There was no mention of the enemy in these orders, possibly because there was no reliable information; but neither was there any mention of the purpose for which the division was thus pushed forward. In other respects, the orders were strangely precise. General Douay was ordered to occupy Weiler, Weissenburg, and Altenstadt, a front of three miles, and his cavalry was to reconnoitre, not to the front, but as far as Schleithal, a village four-and-a-half miles distant on the right. The last paragraph was remarkable. It instructed General Ducrôt, who was to take post with another division at Lembach, some

nine miles from Weissenburg, to take over the command of both divisions, and to give instructions to General Douay for the distribution of his troops. General Ducrôt thereupon issued *his* orders, and he very wisely ignored the detailed instructions of the Marshal, who had probably had no decent map to refer to, and very little knowledge of the ground. Weiler, Weissenburg, and Altenstadt were all three at the bottom of a valley, commanded by high hills, and with dense forests in the near neighbourhood. General Ducrôt, who knew the ground, instructed Douay to post only one battalion in Weissenburg, and to keep the remainder of his troops on the hill behind the town, with one brigade on the Geisberg, one on the Vogelsberg, and the cavalry and artillery in second line behind the crest of the heights. He also informed Douay of the direction in which his cavalry were to reconnoitre, that the enemy would probably not attempt anything serious for some time, that he was to organise a brigade of bakers in his division, to bake 30,000 rations of bread in Weissenburg, to draw supplies from the country, and that he might take his choice of three places for his headquarters.

Douay arrived at Weissenburg on the night of August 3rd, and proceeded to place his troops as well as he could, in accordance with his numerous instructions. He sent one battalion to Weissenburg, where it was eventually captured. His cavalry started out to reconnoitre, in the direction prescribed by the Marshal, and found nothing. The three places of which he had his choice as headquarters were none of them convenient, and he had to go elsewhere. The position indicated by General Ducrôt was much too extended for his small force. The artillery, had it been posted behind the crest, would have been far out of range of any possible attack. The right was in the air, and the cavalry, instead of being retained in second line, had to guard the flank; and, worse still, before he could organise his bakers or think of commencing baking, the enemy, who had 130,000 men within a few miles of his position, did something very serious indeed. At 8.30 the French camp was surprised by artillery fire. At 10 o'clock General Douay was killed, and by 2 p.m. his unfortunate division had lost nearly half its numbers. It is noteworthy that the orders of the Crown Prince, commanding the German Army, were just about half as long as those of MacMahon to Douay, although in the one case 130,000 men were concerned and in the other 6,500; moreover, so applicable were the Crown Prince's orders, written the night previous, that until the French were defeated, and instructions had to be given for pursuit, he had no occasion to supplement them.

But the German staff was not always infallible. Several of the earlier battles were brought on by the commanders of advanced detachments; and it is interesting to consider how far the action of these officers was due to faulty orders. At the battle of Wörth, the orders of the Head Quarter Staff were most certainly to blame. On the morning of the 6th of August, the outposts of the Crown Prince and of Marshal MacMahon were in close contact. The Germans, however, were not yet fully concentrated, and the Commander-in-Chief had determined to postpone attack until his troops had

closed up. In his orders of the previous evening, this intention had been clearly expressed; and the whole army was aware, when the sun rose, that battle would not be joined until the next day. It happened, however, that the 2nd Bavarian Army Corps, standing opposite the French left, was divided from the remainder of the army by a steep and densely wooded mountain; and to this Corps special orders had been sent, to the effect that if they heard artillery fire they were to attack immediately, in order to prevent the French turning in full strength against the 5th Army Corps, which held the German centre. This order was not communicated to the remainder of the army. In complete ignorance, therefore, of the consequence likely to arise from his action, the officer commanding the outposts of the 5th Army Corps, early on the morning of the 6th, made a small reconnaissance in force. A battalion pushed forward beyond the piquet line, and a battery was ordered into action. This demonstration evoked a brisk skirmish. Four French batteries replied to the German guns, and the thunder of the cannonade, reverberating through the wooded valley which hid all view of the combat, brought the Bavarians into action. From political as well as tactical considerations it was found necessary to extricate them from their false position; and the battle once joined, could not be broken off. Victory, indeed, was the result, and the inferior numbers at the disposal of the French Marshal made it impossible that it could have been otherwise. But the loss of life was far greater than would have been the case had not the intentions of the German Commander-in-Chief been nullified by the blunder of his own staff.

We may now turn to Gravelotte. That great victory was not won without a useless sacrifice of life. In the attack upon St. Privat, faulty orders again asserted their baneful influence. At 3 o'clock in the afternoon, when the battle had been in progress for about four hours, Prince Frederick Charles, acting as commander-in-chief in this quarter of the field, received information that the Saxon Army Corps, on the initiative of the Corps Commander, the present King of Saxony, was advancing to turn the French right. The Guard Corps was instructed to hold back until the Saxons could co-operate. Beyond some general instructions, delivered verbally to the Commander of the Guard, no definite order was issued which would have ensured close concert between the flank and frontal attack. That part of the Saxon Corps which was to carry out the turning movement had several miles to march before it reached the French flank; it had a long defile to pass through, a steep hill to climb, and then to deploy for attack. All this was unknown to the Commander of the Guard; and none of Prince Frederick Charles' staff had thought it necessary to make the necessary calculations of space and time, and to embody the result in an explicit order. The consequence was that at 5.15, the Guard Commander, who had reason to believe, from various sources, that the turning column had arrived and had deployed, gave, with the approval of the Prince, the order for his Army Corps to advance. At that time, however, the Saxons had not yet got free of the defile, and the order, as a matter of fact, was given exactly an hour-and-a-half too soon. The result is historical. In that hour-and-a-half the Guards lost

6,000 men, and a vigorous counterstroke would have probably destroyed them.

Such was the outcome of the neglect of staff duties in the attack. A fortnight later the maintenance of the position at Noisseville, when Bazaine made his greater sortie from Metz, was jeopardised by insufficient orders. Noisseville village formed an important part in the defensive front; if it fell a wide breach would be opened in the line, and the Commander-in-chief, General von Mauteuffel, intended that it should be held to the last. This intention was not made clear to the subordinate generals, for the battalion which occupied Noisseville received orders from its brigadier to retire directly it was menaced by superior numbers. Consequently, before it was seriously attacked, the village was abandoned; and although, owing to Bazaine's bad generalship, the consequences were not disastrous, many Prussian lives were sacrificed in vain endeavours to recapture it.

One of the most famous of the campaigns of the American Civil War supplies some useful instances, both as regards verbal and written orders.

On June 27th, 1862, at the battle of Gaines' Mill, before Richmond, General Jackson sent by his aide-de-camp a *verbal* message to his reserve divisions, communicating his plan of attack. The messenger, however, misconceived the general's intentions, and instructed the reserve divisions to await further orders before engaging the enemy. The error was eventually rectified by the chief of the staff; but for two hours the first line had been left without the support which Jackson had intended should be furnished, and was well-nigh overwhelmed.

Two days later, June 29th, another Confederate general, Magruder, received *verbal* instructions from General Lee as to further action against the retreating Federals. Magruder was to co-operate with another division. This co-operation failed for the reason that Magruder believed that this division was to move by one road, while Lee had ordered it to move by another. The verbal instructions were at fault.

On July 1st, advancing against a strong position, Magruder was ordered to march by a road which was designated in his orders as "The Quaker Road." Three guides directed him to this road; but it was found afterwards that there were two roads called by the same name, and that the staff had intended Magruder to march by the one which he did not take.

The same afternoon the Confederates were bloodily repulsed at the battle of Malvern Hill, and the order of attack had much to do with the disaster. It was issued by Lee's staff to the officer commanding Jackson's advanced division, who was to attack the right, and to Magruder, who was to attack the left. It ran as follows:—

"Batteries have been established to rake the enemy's lines.

"If *it* (sic) is broken, as is probable, Armistead (one of "Magruder's brigadiers), who can witness the effect of "the fire, has been ordered to charge with a yell. Do "the same."

Unfortunately for the Confederates, their own artillery was overpowered; the Federal line was not even shaken; a yell *was* heard, but it was not raised by Armistead's brigade; and when the divisions, obedient to the signal, moved forward, their attack was premature, and their loss nearly as heavy as that of the Guard at St. Privat.

Nor did this deplorable incident crown the mishaps of this campaign. The same night the Federals, although victorious in the battle, abandoned the field; but the Confederate pursuit was feeble, the leading divisions mistaking the road which had been pointed out by the Head Quarter Staff.

I shall now give you an instance of a battle lost by inadequate orders. On the same day as Wörth, a single German division attacked at Spicheren the 2nd French Corps d'Armée (commanded by General Frossard), which was believed to be on the point of retreating. Frossard, who was under Bazaine, reported the first appearance of the enemy to his superior. The reply came back from headquarters, twelve miles in rear, to the effect that if the 2nd Corps was attacked by superior forces, it would do well to fall back, and that three divisions had been sent forward to three different points within ten miles of the scene of action. The German division was roughly treated; but other divisions, marching to the sound of the cannon, came hurrying up, and the French became engaged in a stubborn fight with equal numbers. Frossard again reported to Bazaine, and the Marshal informed him that he had ordered one of the three divisions in rear to march to a village five miles from Frossard's extreme right, and another to march direct to his assistance. The latter, however, was not found by the messenger for nearly three hours, and it was then too late to render aid. The 2nd Corps, left without support, was compelled to leave the field, and the chance of a brilliant victory was suffered to escape. But had Bazaine informed his divisional commanders, when they were first ordered to advance, that they were expected to lend a hand to Frossard, the Germans must have been overwhelmed by superior numbers.

Time forbids me to pursue this subject further. Nor is it necessary that I should do so. Further illustrations, drawn from other campaigns, will probably suggest themselves to many of my hearers. I will only say that the mistakes made in the early battles of 1870 were in no way due to the fact that the German Army had seen little of war. In few campaigns has such vast experience been found on either side as in the campaign of Waterloo, and yet from first to last the blunders on both sides as regards orders were of an almost abnormal character. The Prussians were not faultless, but their errors have been obscured by the gigantic mistakes made by the staff officers of both Wellington and Napoleon. Both these great captains were deprived of the trained assistance which they had received in previous campaigns. Few of his Peninsular staff, in spite of his repeated applications, were allowed to join the Duke; and Napoleon, in place of Marshal Berthier, the amanuensis who for so many years had formulated with such absolute precision the instructions of his chief, was compelled to trust to the pen of Marshal Soult, a great

general, indeed, but lacking the mechanical aptitude and the power of expression which had belonged to his predecessor.¹

PART III.

I have endeavoured in this brief historic sketch to show the vast importance of clear and complete orders, and I shall now attempt to show how the art of expressing one's intentions in proper form, and, at the same time, with that rapidity which the exigencies of active service demand, may best be mastered. I shall deal first with an objection with which I have been often met. Officers have sometimes urged, when asked to practise writing orders, that, as regards movements in the face of the enemy, such practice is unnecessary except for staff officers with large bodies of troops; and that for the staff officers of the smaller units, and more especially for regimental officers, verbal and not written orders are and will continue to be the rule. To this objection the first answer is that regimental officers do not remain regimental officers all their lives, that they may possibly rise to high command, and that it is their bounden duty, if they intend to accept such command, to fit themselves for its functions by every means in their power. The second answer is, that whilst it is perfectly true that many orders, in presence of the enemy, must of necessity be verbal, yet if verbal orders are to be clear and complete some previous practice is necessary, and constantly writing them is the best practice. Clearness of expression is the first requisite in orders; and clearness of expression, which is to a great degree a literary accomplishment, can best be attained by constant practice in putting your intentions into unmistakable terms. Again, written orders can be more readily criticised than verbal ones. Mistakes are more patent; excuse is impossible; and the order, improved by the instructor, remains as a guide for future use. Thirdly, it is an unfortunate circumstance of war that units cannot always be kept intact. Even the smallest force may be compelled to make detachments, and with such detachments the commander may find it impossible to communicate personally by word of mouth. He must use an intermediary; and, without again referring to history, it is a notorious fact that in war verbal messages, as a rule, are more often incorrectly than correctly delivered. Even at peace manœuvres this is the case. In the excitement of battle it is almost impossible to avoid. While, therefore, I quite agree that verbal orders are often the only orders possible, I am at the same time convinced that practice in giving such orders is absolutely essential, that facility in writing orders will give facility in issuing them by word of mouth, and that wherever possible it is far better to reduce all orders to writing.

¹ Of the valuable aid such an amanuensis may render, a striking instance occurs in the story of a most brilliant action fought by an English soldier. In his account of Tashkessen, General Valentine Baker writes as follows:—"The conduct of Shakir Bey was beyond all praise. He stuck to me like a shadow, and wrote every order which I gave with such clearness that everything worked perfectly. The troops had carried out the somewhat difficult manœuvres that had to be executed with the precision of parade, and, excepting the bad conduct of the Mustaphiz (a battalion which bolted), not a hitch of any kind occurred in the movements of the battalion."

I may mention here that the issue of verbal orders is most carefully practised in the German Army, and that all officers, from the time they join the Service, are constantly and systematically trained in this essential phase of the art of command. What may be called the verbal war game is a method which is much used in some, if not all, of the Imperial Army Corps. The players, who are often the junior subalterns, give their orders verbally to the instructor. They then leave the room, the pieces are moved on the maps, and the situation is shown as far as it has developed. The players on one side are then called back. They are given a few minutes to look at the map, and then they again give their orders, which are criticised on the spot, not so much as to their tactical soundness, but as to form, length, and expression. German officers moreover, however humble their rank, are constantly asked to write orders, and the result of this consistent practice is certainly remarkable. It is impossible not to be struck by the ease, clearness, and precision with which all officers, previous to any movement in the field, communicate to their subordinates the object of the movement, and the means by which they intend to carry out their task. For instance, in the case of a battalion attacking, the officer commanding gives his orders to his company officers, the company officers to the section commanders, the section commanders to the men, and each one of these officers follows exactly the same system; every order is modelled on exactly the same pattern; hesitation, even amongst the juniors, is hardly ever to be observed, and the consequence is that every man in the whole battalion is exactly informed of what his commander intends to do, and how he intends it should be done.

Excellent, however, as are these results, it is not at first sight clear how they are to be attained. I may say at once that there is no royal road to perfection or even to average skill in framing orders. Practice, and practice only, will give the necessary facility, and every example that is written must be closely criticised. The great difficulty, however, which confronts officers in our Service is the lack of theoretical instruction and of good models. The question really resolves itself into this: How are officers, who intend to attain such skill in framing orders as to be able to instruct others, to instruct themselves? Where are the examples with which they can compare their own efforts? Where are they to find the rules and principles which should be followed? Unfortunately, even the best of our military text-books have little to say on this important subject. In Germany, however, the contrary is the case. Not only is the bearing of orders on both strategy and tactics adequately recognised, but orders are the vehicle of all theoretical instruction. The manner in which principles are applied is taught by imagining a certain force in a certain situation, giving the orders best adapted to the circumstances, and supplementing them with a full explanation of the reasons which dictated them. The best of the tactical treatises which follow this method is, to my mind, the work of Captain Griepenkerl.¹ This work, which

¹ "Taktische Unterrichtsbriege." Berlin: Mittler & Son, Kochstrasse 68-70. 1892.

deals at length with the operations of a small detached force of the three arms, contains a large number of excellent orders, and many admirable suggestions as to the considerations which must be borne in mind when writing them. Complete instruction, moreover—so far as rules and principles, without models, can instruct—is to be found in Colonel Hare's excellent translation of the "Duties of the Great General Staff," published by the War Office, and giving what is practically a summary of von Moltke's methods and von Moltke's teaching. This volume, at the same time, is perhaps the most valuable tactical text-book which exists, for it embodies the experience of two great wars, and the chapter on orders is so full—at least, as regards European warfare—that it is hardly necessary to go further. I may mention, however, that the "Felddienst-Ordnung," translated by Major Gawne and Mr. Spenser Wilkinson, under the title of "The Order of Field Service of the German Army," has four short pages on orders which are nearly as valuable as the instructions for outposts.

Having informed you of the best sources from which instruction in writing orders may be derived, I hardly think it necessary, even if time permitted, to discuss step by step this afternoon the framing of orders in the field. To do so, indeed, would be only to recapitulate the rules laid down in the "Duties of the Great General Staff," and I shall do no more than to enlarge on certain points which, judging from my own experience as an instructor, require further explanation. I will first describe the ordinary procedure. Orders in the field come under one of three headings:—

In Wellington's Army, for instance, there were—

1. *Standing Orders*. These were issued in the form of General Orders, were gradually embodied in printed volumes, and issued to all commanding officers.
2. *Daily Orders*, dealing with administration, discipline, subsistence, and sanitary arrangements; issued by the Adjutant-General's Department.
3. *Operation Orders*, dealing with marches, attack, the occupation of positions, etc., etc., and issued by the Quartermaster-General's Department.

Of the first, the Standing Orders of the Light Division, compiled by General Crawford, are the best example. They contain much that is embodied in our present Drill Book, for it is to be remembered that in the days of the Peninsular War there were no tactical regulations with which every officer was familiar; and at the same time they contain much that was only applicable to the country in which the troops were then operating. This must always be the case. Standing Orders, especially such as refer to supply and transport, police and camp followers, marches, outposts, encampments, pay and subsistence, must vary with the theatre of war. Standing Orders applicable to Europe are not applicable to India or to Africa, but they must be framed in accordance with local conditions. It is unnecessary to speak at length as to the orders coming under this heading; but I may remark that if Standing Orders

are carefully compiled, much labour in framing daily and operation orders may be saved. For instance, in Wellington's orders, outposts are very seldom mentioned. It will be found, however, on reference to the Despatches, that from time to time General Orders were issued which contained all the necessary instructions; details, it appears, were left entirely to the officers commanding divisions and brigades; those nearest the enemy were expected to provide for the security of the army, and it was unnecessary to give them daily instructions as to their normal duty.

Daily orders need not detain us. They are not peculiar to the field, and are similar, *mutatis mutandis*, to those issued in peace.

Operation orders are the important part of our subject, and whereas standing and daily orders have a very large scope, the orders for military operations are strictly limited. Dealing all of them with the enemy, and with the means by which he is to be defeated or checked, they follow much the same form, and may be embodied, to a great degree, no matter what the situation, in almost identical phraseology. In orders for marches, for attack, for defence, and for outposts, words and expressions may be said to be stereotyped. The question of the shape in which orders should be issued, however, is one on which there is not complete agreement. For the march, for outposts, and for the occupation of a defensive position, when time is not pressing, a combined order is the best method of securing intelligent obedience. When time presses, on the other hand, the speediest method of directing the troops may be to send a separate order to each portion of the force. On this point it is impossible, I think, to lay down a hard and fast rule. It is to be noted, however, that a combined order has many advantages; and for the preliminary movements of an engagement, for communication of the general plan of battle, and of the part each arm is expected to play, it will save time and trouble, and ensure thorough combination, if the instructions to each portion of the force are embodied in a single document. Even if the order cannot be dictated to the staff officers of the various units concerned, with carbon paper (putting the type-writer out of the question, as inapplicable on the battle-field) copies can be multiplied. It is true that carbon paper is not altogether a satisfactory medium of transfer. In rain or wind it is difficult to manage. But it is the only medium which exists; and until some more manageable invention takes its place, officers must put up with the complicated process which its use involves. I may mention that I read lately, in a report by an officer of the Guards, of a "reduplicating pad" employed in the United States Army in the Civil War, which was capable of producing eighteen copies simultaneously. This is a great advance on any copying process of which I have knowledge, and the officer who could invent as efficient a substitute for our present field order books would be a benefactor indeed.

The next point is the *form* of the combined order. All tactical orders, so far as possible, should be framed in accordance with a stereotyped form. In the first place, if orders are issued in a form with which officers are familiar, comprehension will be facilitated. And this is of peculiar

importance in war. Orders have to be read and digested under the most disturbing circumstances. A camp lantern, illuminated by a sputtering candle, may be the only light. The recipient will often be tired out. He may be in bivouac, without shelter, and in the worst of weather, or he may be under fire. No single precaution, therefore, should be omitted which will aid him in grasping his instructions without trouble and without delay. They should be as short as possible. The language should be simple. The handwriting should be exceedingly legible. Names and places should be printed in block capitals. Paragraphs should be numbered. Orders of march, and the distribution of units should be in tabular form, and if possible in the margin, and above all no officer should have the slightest difficulty in finding the paragraph in which he is specially interested. He should know where to look for the information as to the enemy, for the intention of the general officer commanding, for the position of the ammunition column or of the field hospitals, just as he knows where to turn for the leading articles, or perhaps for the sporting intelligence, in his daily paper. I have given in the appendix the forms applicable to the more prominent tactical operations, to marches, outposts, attack, and the occupation of a position, and although I have not the slightest doubt that they may be much improved, I believe that if officers copied these forms into their note-books they would find them of great use on service; and further, that if officers, in issuing either written or verbal orders, were consistently to adhere to these forms, it would be difficult either to neglect essential details, or to create confusion in the minds of those who would have to execute the orders. The forms are logical. They state what is known of the enemy; the position of those portions of our own army with whom we are working in co-operation; the intentions of the general officer commanding; the tasks allotted to the three arms—each arm in the order in which it will join in the engagement—and they conclude with all necessary information as to the auxiliary services, and the position of the officer issuing the order. The outcome is that the recipient of the order views the situation from exactly the same standpoint as his superior; that he has a true picture before him of the end to be achieved, and of the successive steps by which that achievement is to be accomplished.

Putting tactical considerations aside, the chief difficulty of applying these forms to situations, is connected with the first two paragraphs. The first gives the general situation. This information, as a general rule, when it is to hand, is undoubtedly a most desirable preliminary. To take for instance the cavalry. It can hardly be questioned that the cavalry commander, under all circumstances, should be informed of the strength of the opposing cavalry, and of what is known of the enemy's dispositions. If he is aware that he may be opposed in force he will act with prudence. If the enemy is weak in cavalry, he will act with boldness. And so with the other arms. If officers know with what number, and with what arms, they may have to deal, they will be prepared—forewarned is forearmed. At the same time, the rule that this information is to be given is not of universal application. The

enemy's strength or disposition may be but vaguely known. It may be considered undesirable that the troops should know that the enemy is superior in numbers, or that spies and deserters should inform the enemy that his strength and dispositions are the property of his adversary. I will take for instance von Moltke's orders issued on the morning of Gravelotte.¹ The first, issued before the position of the French was known, gives merely the order of march, details a flank guard, and concludes by saying that "further arrangements will be dependent upon the measures of the enemy." The second, issued when the French disposition had been discovered, gives the sum of all the information received up to that time, and dictates the general plan of battle.

The second paragraph, that which gives the intention of the general officer commanding, is really the crux of all orders. To reduce a plan, which involves the three arms, several units, and possibly intricate manœuvres, to a few short sentences, of which the meaning shall be unmistakable, is, for the majority of men, a task of much difficulty; and the composition of this paragraph, as a rule, requires more thought and attention than the composition of all the remainder put together. Constant practice and very careful criticism are the only methods by which the requisite facility can be attained, and I would strongly advise all students of military history to study, whenever they can get hold of recorded orders, the manner in which such men as von Moltke and his pupils dealt with this difficulty in their campaigns. Here, again, it is to be observed that the rule is by no means to be considered invariable. It is impossible to deny that a thorough understanding of the aim of the operations in which they are engaged will ensure the cordial and intelligent co-operation of all ranks. But if there is the slightest possibility of the intention of the general being conveyed to the enemy, it should not be divulged until the last possible moment. It should be remembered that despatches have a constant habit of going astray. Staff officers and orderlies may lose their road and ride into the enemy's lines. They may be captured by daring patrols, or spies may make their way into the headquarter offices. "If we knew what our enemy was going to do," said Frederick the Great, "we should be certain of beating him." Secrecy, therefore, is a point of paramount importance, and the German Staff Duties lay as much stress on the necessity of keeping orders from the knowledge of the enemy as on the necessity of framing them in accordance with sound principles. It is a historical fact that the first Confederate invasion of Northern territory was defeated by the discovery of a confidential order of General Lee, the Confederate Commander-in-Chief. It had been dropped by some careless staff officer or orderly, and was found by the Federal cavalry in an abandoned camp. The Federal general, who had hitherto been entirely in the dark, immediately moved forward, and marching with resolution, was enabled to inflict a decisive check on the invading army. Nevertheless, the preservation of secrecy does not prevent the general officer commanding communicating his

¹ See appendix.

intentions confidentially to his immediate subordinates. Nor is it necessary, in any case, or even desirable, that the orders issued to units should be in any single paragraph a literal transcript of the orders which the commanding officer has received. He does not, as in peacetime, or as in daily orders, "publish for information" orders with regard to operations, but he uses his own judgment as to the amount of information, both as regards the enemy and the plan of action, which it is necessary to impart to his command.

I now come to a point which deserves attention. How far should orders go into detail? The answer is simple. According to the "Feld-dienst-Ordnung":—"An order must contain everything which the subordinate cannot of himself arrange for the attainment of the object, and nothing more." According to the Staff Duties:—"It is absurd to attempt to give instructions in detail to meet the various and possible contingencies that might occur. Experience in past wars shows that when this has been attempted, some cause that had not been reckoned on was almost sure to happen and find the subordinate leaders fettered with a variety of instructions effectually crippling their free and independent action." I will give one historical illustration. The night before the battle of Jena, Prince Hohenlohe, commanding the Prussian corps which was nearest the French, was ordered to remain in his position on the steep plateau above the town, and on no account whatever to leave it. During the night Napoleon scaled the heights, and occupied the crest with his advanced guard. So daring a proceeding had never been contemplated by the Prussian Staff; Prince Hohenlohe was fettered by his orders, and next morning, instead of attacking vigorously and driving his audacious enemy down the hill, he suffered the whole French Army to deploy at leisure on the heights. Again, it would be a great waste of time as well as a want of judgment to recapitulate the normal duties of the commander of an advanced or rear guard. Those duties are contained in the drill-book; and if an officer is not acquainted with them, or needs to be reminded of them, it speaks badly for the training he has received. Absence of detail is especially important in peace. Orders at field days and manœuvres should be even less minute than in war. Exercises across country afford the best opportunities of teaching officers to use their judgment, to apply the principles of tactics, and to act in accordance with the necessities of the situation. To make men self-reliant it is not sufficient that they should be full of knowledge. They must have acquired the power of bearing responsibility; and to train them to this extent it is absolutely necessary that they should be placed in responsible positions, *and that they should be encouraged to employ their intelligence in furtherance of the general aim.* If officers blunder at manœuvres; if their judgment is faulty; if they cut loose from all control, not only is no harm done, but, if their shortcomings are clearly pointed out, a great deal of good will result. Every officer engaged will receive a most useful object lesson—a lesson which would be altogether lost were every movement directed on the spot by superior authority, and the subordinates allowed no opportunity of making mistakes.

You are well aware of the care with which self-reliance and initiative are fostered in the German Army. In our own Army such incessant and peculiar care is hardly demanded. The conditions of service are so diverse that English officers of all ranks, in India and the Colonies, are constantly called on to assume grave responsibilities. Moreover, the character of the two peoples is essentially different. Whence the difference arises is not a question which concerns us here, but it is certainly an undeniable fact. It is seldom necessary to inculcate self-reliance in an Englishman or American. It is the predominant characteristic of the Anglo-Saxon stock, of the great sea-going and colonising race. But there is a danger. Some of you may perhaps have noticed that in a lecture on the South African Republics, delivered a few weeks ago, Mr. James Bryce declared that President Kruger "enjoyed an unexampled influence over his fellow-citizens, an influence which arose partly from his astuteness and resolute will, these advantages being seconded by the great fact that his natural vigorous faculties had not been spoiled by education." Now whether it is the case in Germany that over-education has undermined the natural vigour of her sons, and that it has to be counterbalanced by special preparation for responsibility, I am not aware. But it is most certainly to be apprehended that if men are always kept in leading-strings, never permitted to use their own judgment, they will degenerate into mere machines, incapable of independent resolution. So, notwithstanding the temperament of the British officer, it is essential that in this day of incessant education he should be so trained in peace that he will not lose his power of initiative in the field. If, then, orders at field-days and manœuvres cannot assume the brevity of Suworoff's famous order: "God wills, the Czar commands, Suworoff orders, that the enemy shall be defeated," they should at least refrain from interfering with the normal functions of subordinates. In war it is different. Much will depend on the character of the officer to whom the order is addressed. He may be absolutely unknown to the commander. He may be ignorant, strange to his position, or fearful of responsibility. If it is impossible to remove him, blunders must be guarded against by giving him minute and detailed orders. It would seem that this must especially be the case with troops which lack training; and I have no doubt, Sir, that you, the only English general who has led a force composed solely of Volunteers against the enemy, can speak on this point with all the weight of unique experience. Nor is it wise in a general to omit every possible precaution against disaster. With a highly-trained army, however, detailed orders should be rare. It is noticeable how Wellington's orders in the Peninsula gradually decreased in length as his troops learned their business. In the earlier campaigns the most careful instructions were issued for every movement, especially when generals were concerned whom he could not trust. Later, when the incompetent had disappeared, his orders became almost as brief as those of the German generals in 1870. He knew his lieutenants, his officers were veterans, and his orders were a mark of their mutual confidence. A foreign officer, of great ability and great observation, once remarked in my hearing:—"You can always tell the value of an army by the orders.

If the officers are good and the orders detailed, the general is stupid. If the general is a good soldier, and he finds it necessary to issue detailed orders, his officers have been badly trained."

Moreover, as regards attack, it will often be impossible to go into detail in the order which sets the troops in motion. It will be rare indeed that the exact position of the enemy is known before the troops are already in collision. Time will seldom permit of elaborate arrangements. An order for an advance on a broad front to a rendezvous position is the shape which the formal battle order will generally assume. Further orders will depend on the results of reconnaissance, of the action of the advanced guards, and on the gradual development of the fight. A short combined order is, therefore, the best means of initiating the fight, leaving all details to the subordinate leaders. Brevity is essential. When two armies meet, the general who makes up his mind first, and who carries his plan through with all the energy he possesses, will have a great advantage over an adversary who deliberates too long; and if this be admitted, there can be no question that attack orders ought to be reduced to the very smallest compass, and that subordinates should be trained to act intelligently on orders which leave much to their discretion. I refer you to the orders of von Moltke, given in the appendix, for the attack on the French position at Gravelotte. They certainly do not err on the side of verbosity.

PART IV.

I come, lastly, to orders as a method of instruction. "In orders," it has been said, "tactics crystallise," and from orders, applied to a concrete situation, the extent of the knowledge of the man who gives them is most readily determined. The examinations for promotion are to-day chiefly concerned with orders, and, in my humble opinion, this is a long and most practical step forward. It would seem, however, that preparation for such examinations and instruction in the art of framing orders cannot begin too soon. Simple orders might well be made a feature of all military examinations. From the moment a boy joins as a cadet he should be taught to apply the principles of tactics by presenting his ideas in the shape of orders, and a movement in this direction has already, I believe, been made at the Royal Military College. No tactical scheme, to my mind, can be called complete, nor can full profit be derived from it, unless this is done, and unless, at the close of a field-day, the orders issued are closely criticised, full advantage has not been taken of the opportunity for instruction. At the Staff College the framing of orders has long been one of the main features of the course. Every year its importance has become more clearly recognised; and at the present moment an order in one shape or another, is attached to almost every report that is submitted. The system has gradually developed, and I may inform those who may have to do with instruction of officers, that to get the best value out of written and also out of verbal orders, students should be asked to give their reasons for every paragraph of their orders. This system has been lately established at the Staff College by the present Commandant, and I am

convinced with the very best results. If officers have to give the why and wherefore of every decision; if they have to explain why their detachments are of such and such a strength; why they put a battery with the advanced guard; why they send a certain number of squadrons in a certain direction; why they consider so many companies sufficient for a rear-guard, etc., etc., etc.; and if they are clearly given to understand that to say such a disposition is suggested by the drill-book, or is the custom of war in like cases, is no reason at all, they will soon learn to exercise their judgment, to discard leading strings, and to apply their common sense to the work before them.

I may add, also, that it is excellent practice to issue orders on the ground, without a map to which to refer. English soldiers have generally to fight in countries where maps do not exist, and it is of very great importance that officers should acquire the habit of describing roads, tracks, and natural features, so that there may be no mistake as to direction or objective.¹

With this advice to my brother-instructors—and nowadays who is not an instructor in the Army?—I will bring my lecture to a close. To those regular officers—if such there be—who are not Cromwells or Stonewall Jacksons, who are merely ordinary soldiers, and not great men of action, who lack something of the clear insight and the unerring decision of military genius, I trust I have made clear the necessity of perfecting themselves in the art of writing orders. To those who are not regulars I would say one word. Wellington, in words that should be for ever memorable, said of the Spanish troops in the Peninsula that they had enthusiasm enough, but that they lacked two essential qualities—habits of obedience on the part of the men, habits of command on the part of the officers. Now, without suggesting for a moment that there is any resemblance between the magnificent material of our citizen soldiers and the ignorant and half-starved levies of Spain, I am still of opinion that to some degree at least these words must be true of all troops who are not regulars. It is impossible that it could be otherwise. Discipline is neither an hereditary nor a natural instinct. It is created by habit, and by habit only. But just as on an ordinary parade, the officer who has a good word of command, who knows his drill, who betrays neither hesitation nor uncertainty, is readily obeyed, so the officer who has learned to give clear and unambiguous orders, leaving no doubt as to his intentions, and no doubt as to what he expects, has acquired something at least of the habit of command. From practice comes confidence; and confidence, apparent in every tone of a man's voice, begets confidence in others. Hesitation is the parent of doubt and apprehension. Stonewall Jackson, the great soldier of whom I have already spoken, carried in his haversack on service Napoleon's Maxims and the Bible, and it is said that it was not from the first alone that he derived strategical and tactical inspiration. The statement is possibly true, for there is one sentence at least which is peculiarly

¹ Compare Orders for the Attack of the position of Vera, dated 5th October, 1813.—"Wellington Despatches," Vol. VII., pp. 37-40.

applicable to my subject—"If the trumpet give forth an uncertain sound, who shall prepare for battle?"

I should like, in conclusion, to express my thanks to those officers whose ideas on orders I have appropriated, to Colonel Hildyard, Commandant of the Staff College, to my brother Professors, and to Captain Gaisford, of the Royal Scots Fusiliers, for the loan of a collection of orders issued at various stations and camps of exercise.

APPENDIX.

SKELETON ORDERS FOR A FIELD FORCE OF ALL ARMS.

ORDER OF MARCH.

Number	Place	Date	Hour of Issue
	<i>Distribution.</i>	<i>Para.</i>	
1.	Independent Cavalry— C.O. Cavalry	1. Information as to— 1. Enemy 2. Our other Forces	
2.	Advanced Guard (not in order of March)— C.O. Infantry Cavalry R.A. R.E. Bearer Company.	2. Intention of G.O.C. Field Force 3. Order for the Independent Cavalry 4. Order for the Advanced Guard 5. Order for the Main Body	
3.	Main Body in order of March— Cavalry Infantry R.A. Infantry R.E. Bearer Company.	6. Order for the Flank Guard 7. Order for Ammunition Column Field Hospital Heavy Baggage 1st Line Supply Column	} Escort
4.	Right or Left Flank Guard— C.O. [As for Advanced Guard]	8. Position of G.O.C.	
NOTE.—1. Mounted Infantry 2. Machine-Gun Sections 3. Pontoon Troop		NOTE AS SOMETIMES NECESSARY. Orders for— 1. Signallers 2. Halts 3. Rations to be carried 4. Military Police.	
To whom dictated To whom despatched By whom			

ADVANCED GUARD ORDER.

Number	Place	Date	Hour of Issue
<i>Distribution in order of March.</i>		<i>Para.</i>	
1.	Advanced Guard Cavalry— C.O. Cavalry	1.	Information as to— 1. Enemy 2. Our other Forces
2.	Van-Guard. C.O. Cavalry Infantry R.E. (if necessary)	2.	Intention of O.C. Advanced Guard
		3.	Order for the Advanced Guard Cavalry
3.	Main Body— Cavalry Infantry R.A. Infantry R.E. Bearer Company.	4.	Order for the Van-Guard
		5.	Order for the Main Body
		6.	Order for the Flank Guard
		7.	Position of G.O.C.
4.	Right or Left Flank Guard— C.O. Infantry Cavalry R.E. Bearer Company.	NOTE AS SOMETIMES NECESSARY. Orders for— 1. Signallers 2. Halts	
NOTE.—1. Mounted Infantry 2. Machine-Gun Sections			

To whom dictated
To whom despatched
By whom

OUTPOST ORDER.

Number	Place	Date	Hour of Issue
<i>Para.</i>			
1.	Information as to— 1. Enemy 2. Our other Forces		
2.	Mission of the Outpost Troops. [Including line to be occupied.]		
3.	Order for the Outpost Cavalry. [Including Troopers to be attached to Outpost Companies for patrolling at night.]		
4.	Order for the Outpost Companies		
5.	Order for the Reserve		
6.	Order for establishment of Examining Guard		
7.	Order for Signallers and Telegraph		
8.	Action in case of Attack		
9.	Position of O.C. Outposts		
NOTE.—The majority of the points noticed in Infantry Drill, Section 164, would be dealt with in Standing Orders.			

ORDERS FOR THE OCCUPATION OF A POSITION.

Number	Place	Date	Hour of Issue
<i>Para</i>			
1.	Information as to—		
	1. Enemy		
	2. Our other Forces		
2.	Intention of G.O.C.		
	(May include: 1. Extent of position. 2. False front.		
	3. False flank. 4. Counter attack.)		
3.	Order for the R.A.		
4.	Order for the Infantry, or for each section of position		
5.	Order for the Third Line		
6.	Order for the R.E.		
7.	Order for the Cavalry		
8.	Order for the Signallers		
9.	Order for Medical Arrangements		
10.	Order for the Ammunition Column		
11.	Position of G.O.C.		
	Orders may be required for—		
	1. Mounted Infantry		
	2. Machine-gun Section		
	3. Signallers and Telegraph		

NOTE.—1st Line Supply Column and Heavy Baggage generally dealt with in a separate Order.

To whom dictated
To whom despatched
By whom

ORDER FOR RETREAT.

Number	Place	Date	Hour of Issue
<i>Distribution.</i>		<i>Para.</i>	
1.	Advanced Guard (not in order of March)— C.O. Infantry Cavalry R.E.	1.	Information as to— 1. Enemy 2. Our other Forces
		2.	Intention of G.O.C.
		3.	Order for Heavy Baggage 1st Line Supply Train Field Hospital Ammunition Column
2.	Main Body in order of March— Bearer Company. R.E. Infantry R.A. Infantry Cavalry		
		4.	Order for Advanced Guard
		5.	Order for the Main Body

} Escort

ORDER FOR RETREAT—*contd.*

- | | |
|--|---|
| 3. Rear Guard (not in order of March)—
C.O.
Infantry
Cavalry
R.A.
R.E.
Bearer Company. | 6. Order for the Rear Guard

7. Order for the Flank Guard

8. Order for the Independent Cavalry. [Unless forming part of Rear Guard]

9. Position of the G.O.C. |
| 4. Right or Left Flank Guard (as Rear Guard) | |
| 5. Independent Cavalry—
C.O.
Cavalry | |

NOTE AS SOMETIMES NECESSARY.

Orders for—

- NOTE. 1. Mounted Infantry
 2. Machine-Guns
 3. Pontoon Troop

1. Signallers
 2. Halts
 3. Rations to be carried
 4. Military Police.

To whom dictated
 To whom despatched
 By whom

REAR GUARD ORDER.

Number	Place	Date	Hour of Issue
	<i>Distribution in order of March.</i>	<i>Para.</i>	
1.	Main Body— Bearer Company R.E. (if present) Infantry R.A. Cavalry	1.	Information as to— 1. Enemy 2. Our other Forces
2.	Rear Party— C.O. Infantry Cavalry	2.	Intention of O.C.
3.	Cavalry of Rear Guard— C.O. Cavalry	3.	Order for Main Body
4.	Right or Left Flank Guard— C.O. Infantry Cavalry	4.	Order for Rear Party
		5.	Cavalry of Rear Guard
		6.	Order for Flank Guard
		7.	Position of O.C.

- NOTE.—1. Mounted Infantry
 2. Machine-Guns
 3. Signallers

To whom dictated
 To whom despatched
 By whom

ORDER FOR ATTACK.

Number	Place	Date	Hour of Issue
<i>Para.</i>			
1.	Information as to—		
	1. Enemy		
	2. Our other Forces		
2.	Intention of G.O.C.		
3.	Order for the R.A.—		
	1. First Position		
	2. First Target		
4.	Order for the Infantry—		
	1. Distribution		MAY BE REQUIRED
		1.	C.O. to be detailed for Secondary Attack or Turning Column
	2. Front	2.	C.O. to be detailed for Main Attack
	3. Objective	3.	Compass bearing of Objective
	4. Time of Attack		
5.	Order for the General Reserve—		
	1. Troops		
	2. Position		
6.	Order for the Cavalry—		
	1. Position of Main Body (as a rule)		
	2. Special Instructions for Patrols (sometimes)		
7.	Order for the R.E.		
8.	Order for the Ammunition Column		
9.	Order for the Bearer Company or Field Hospital		
10.	Position of the G.O.C.		

- NOTE.—1. Mounted Infantry
 2. Machine-Guns
 3. Signallers
 4. Telegraph

To whom dictated
 To whom despatched
 By whom

DISEMBARKATION ORDER.

Number	Ship	Date	Hour of Issue
1.	Information as to—		
	1. Enemy		
	2. Our other Forces		
2.	Intention of G.O.C.	[Description of operation and time it is to commence]	
3.	Order for the Cavalry		
4.	Order for the Infantry		
5.	Order for the R.A.		
6.	Order for the R.E.		
7.	Order for the Heavy Baggage—		
	Ammunition Column		
	Field Hospital		
	1st Line Supply Column		
8.	Position of G.O.C.		

Orders may be required for—

1. Signallers
 2. Mounted Infantry
 3. Machine-Guns
 4. Telegraph
 5. Pontoon Troop
- To whom dictated
To whom despatched
By whom

NOTE.—MAY BE NECESSARY.

1. Rations to be carried
2. Blankets to be carried
3. Extra ammunition to be issued before leaving ship
4. Horses to receive a half-feed, and troops to breakfast before disembarkation

VON MOLTKE'S ORDERS AT GRAVELOTTE.

17th August, 1870, 2 p.m.

The Second Army will be formed at 5 o'clock to-morrow morning, the 18th, and advance in echelon from the left between the Yron and Gorze brooks (generally between Ville sur Yron and Rezonville). The VIIIth Army Corps will accompany this movement on the right flank of the Second Army. Upon the VIIth Army Corps will devolve, in the first instance, the duty of protecting the movements of the Second Army against any hostile enterprises from the side of Metz. His Majesty's further arrangements will be dependent upon the measures of the enemy. Reports will, for the present, be sent to his Majesty on the heights south of Flavigny.

18th August, 1870, 10.30 a.m.

From reports received it may be assumed that the enemy intends to maintain his position between Point-du-Jour and Montigny-la-Grange.

Four French battalions have moved into the Bois des Genivaux. His Majesty is of opinion that it will be desirable to move off the XIIth and the Guard Corps in the direction of Batilly, so as, in the event of the enemy retreating upon Briey, to meet him at Ste. Marie-aux-Chênes; or, in the event of his remaining on the height, to attack him from Amanvillers. The attack should take place simultaneously by the First Army from the Bois de Vaux and Gravelotte, by the IXth Corps from the Bois des Genivaux and Verneville, by the left wing of the Second Army from the North.

RULES ON FRAMING ORDERS IN THE FIELD.

1. Heading should invariably contain Number, Place, Date, Hour.
2. If in a town or village, it is not sufficient to head orders "Head-quarters"; the name or locality of the building should be given.
3. The language should be simple and the sentences short.
4. The handwriting should be legible.
5. The paragraphs should be numbered.
6. The paragraphs should be in logical sequence, so that the orders can be read through without interruption or harking back.
7. Everything the recipient ought to know, in order to enable him to act intelligently in accordance with the spirit of the orders, should be included.
8. In all cases where exact knowledge of the enemy's strength or dispositions is not to hand, the source of such information as is published should be invariably given. It is well, moreover, in publishing the enemy's dispositions, to say at what hour he was at such or such a place; for instance:—

"According to the reports of the inhabitants, at least 10,000 men of all arms arrived at A this morning, April 10th, and were in occupation of that village at 3.30 this afternoon."
9. All names and places should be printed in block capitals.
10. If there are two places of the same name, care should be taken to distinguish which is alluded to. It will be found that there are often farms, woods, cross-roads, of the same name in the same district.
11. If cross-roads are mentioned, their exact position should be carefully described.
12. The map used should be mentioned.
13. Great care should be employed in using such terms as "right," "left," "before," "behind," "front," "rear," "on this side of," "on that side of."
14. Suppositions and probabilities, as well as instructions to meet possible contingencies, are generally bad.
15. "An order should contain nothing which the subordinate commanders, who have to execute it, can arrange for themselves."—Von Moltke.

16. "No order should be issued for anything that would be done by the troops without special orders. If the troops are accustomed to have every detail of their normal duty pointed out in orders, they will get into the habit of doing nothing when orders are not forthcoming."—Von der Goltz.

17. "The superior officer should never prescribe to his subordinate at a distance what the latter is better able to decide from being on the spot."—Von der Goltz.

18. "The expression 'will await further orders' should be most sparingly used. Such a measure paralyses the subordinate leaders."—Von Moltke.

19. In an order of march it should always be stated that the head of the column will move off from or pass a prescribed point at a certain time. So as not to block lateral communications, the head of the column should always form up in rear of cross-roads, or the tail in front of them.

20. Detachments, including advanced, rear, and flank guards, as well as turning columns, should have a C.O. detailed by name in orders. This facilitates the delivery of messages and reports.

21. If there is in an order a single word, the omission of which would make no difference to the meaning, the order is too long.

22. All orders sent by telegram should be most carefully numbered.

23. An officer after writing the order should test its clearness by reading it over, and putting himself in the place of the officer who is to execute it.

24. It is a great safeguard if, before issue, the order is read over and checked by an officer other than the writer.

Before I conclude, I must add that the Commander-in-Chief permits me to express his regret that he was unable to attend the lecture, and to say that he is firmly convinced of the very great importance of all officers, from the first moment they join, learning to put their intentions and ideas into clear, unmistakable terms, and of practising from that moment the art of issuing orders in the field and under fire.

Captain W. H. JAMES, Retired, late R.E.: I think it would be a great pity if the very able lecture which has been given this afternoon by Colonel Henderson provoked no discussion amongst this audience. Not that I think it would be possible for anybody to controvert the principles which he has laid down, but because the interchange of ideas on the many points to which he has alluded would, doubtless, give rise to thinking, the results of which would be valuable, not only to those who are here present, but also to those who may subsequently read the proceedings. I am sure we are much indebted to Colonel Henderson for dealing with a very difficult and very vital subject in the able and admirable manner that he has done, and I venture to think that this lecture may form the basis of a course of instruction which may be of the greatest benefit to the Army. Orders are the embodiment of the will of the general, and it is, therefore of the utmost necessity, as he has pointed out to us, that they should be clear on all the points that they deal with. It seems, therefore, curious at the present moment that we have in England no authoritative utterances on the subject of orders. The

Queen's Regulations deal with the Regimental Order Book, but says nothing whatever on the general principles of orders. Let us hope one result of this lecture may be an authoritative proclamation as to how orders should be issued, not only in peace-time, but in the field. Everybody must concede at once the desirability of orders being based and written on a definite system, because it is of the utmost importance that those who receive them should know where to look for every point and should easily understand what is required of them. I am personally of opinion that you may divide orders really under four heads, these are: "standing" orders, which I need not say anything about; "formal" orders, viz., those orders which are issued some little time before they are meant to be carried out—probably the evening before, or even earlier; "immediate" orders, that is to say, orders which are sent off at the moment for immediate execution; and lastly, instructions. Colonel Henderson has quoted, with regard to "immediate" orders, one of the most patent examples of how not to do it that has ever been perpetrated in this or in any other Army, viz., the orders sent to Lord Lucan with regard to the conduct of the Balaclava charge. These orders failed in one of the most essential points—they did not clearly indicate the object for which they were issued. It is useless at this time of day, forty years after the event, to ascertain upon whose shoulders the blame should be laid, but everybody knows what the result was, and everybody who has read the history of the Crimean War can see that the blunder made did arise out of want of precision in the orders that were issued. In the case of "formal" orders, I think we may well go to that mine of wealth, the German Official Account of the 1870-71 war, or perhaps even to a better book, dealing with one phase of it, and that is Von der Goltz's "Seven days of Le Mans." He gives in that the best military history which exists of this phase of the campaign, for he specifies every day what was known before the orders were issued, and then gives the orders issued as the result of that knowledge. When we come to deal with "instructions" I think, with great deference to Colonel Henderson, and I believe I shall have a good many officers with me in what I am going to say, that it possibly is an English fault that we are rather apt in issuing orders to deal with points which would be better left to subordinates. There is a very good example of what instruction should not be in that excellent work by the Austrian General Staff on the war of 1859. It gives us six printed pages of instructions and orders that were issued by Gyulai to his corps commanders on the 19th May. These have been criticised by various eminent writers, and everybody who has done it has universally remarked that for a general commanding an Army to deal as he did with battalions and squadrons, is to go distinctly out of what is his sphere, and to interfere with the proper executive duties of his subordinate officers. Now, one great disadvantage of this interference with the duties of the subordinates is that it crushes out initiative. The officers who rely for inspiration on the orders that they receive from the higher authorities, are as a rule, incapable of acting themselves when they do not get them. You find this exemplified in many wars, and, therefore, it is of the utmost importance that we should follow out the rules laid down in the "Duties of the General Staff," and in other German authorities, never to deal with those points which the subordinate on the spot is better capable of dealing with than his absent superior officer. This leads me to another point, viz., this, that if the superior officer is to issue orders at all, it is perfectly plain that he must get the information about the enemy, or that he should, when possible, get it sufficiently early in the day to enable him to devise his orders for the next day. It is perhaps asking too much that we should follow Napoleon's example, who used to go to bed after a fairly early dinner, and get up at twelve o'clock at night, when he got the reports in from the advanced cavalry, and the detached corps commanders, and so on, and then set to work to write the orders for the next day; but whether the future commander does this or not, whether he issues them as is more commonly the case in the early evening, it is distinctly necessary

that the subordinates must report to him and facilitate the issuing of the orders by sending in the information in such time that it shall reach him. Referring once more to the question of detailed interference by English superior officers with the subordinates, I should like to emphasise most strongly what Colonel Henderson said about Section 164 of the Infantry Drill. Anybody who reads it will see that if it was to be the duty of the staff officer every night of his life to issue orders on all the points contained therein, he would find it monotonous, that those who received these orders would find them tedious, while they would be absolutely useless if the officers and men who received them had been properly trained in peace-time. In the new "Cavalry Drill Book" to a certain extent these outpost orders have been modified and such intense detail is not insisted upon, but I venture to think even there we might have gone a little further, and whilst describing what should be done, not have laid it down as a Median and Persian law never to be omitted, that all these little detailed points which are really matters of common knowledge or should be, should be reiterated night after night. I think, further, we in England might have a very judicious addition to the many subjects which the British officer is supposed to know nowadays, and that is what the Germans call *Geschäfts-Styl*, i.e., business training. Business training involves amongst other points the method of writing orders, and I am convinced that by the introduction of some system of instruction of that kind the issuing of orders would be much facilitated, and an immense amount of friction and worry and trouble would be saved, not only to those who have to write the orders, but to those who have to read them and carry them out.

Lieut.-Colonel E. GUNTER, Retired, late East Lancashire Regiment: May I ask the lecturer one question? He has referred in his lecture to the German system of practising the issue of verbal orders. Is any such system now carried out at the Staff College? He has said the officers there are much practised in *writing* orders. But is the practice of giving clear, verbal orders in the presence of others, especially of senior officers, carried out? It appears to me this is an important part of training. The fact that so much attention is paid to it in the German Army shows that it is. I think that like the system of "communicating drill" much good would come of its practice. A man may be good at writing orders, but unless constantly practised in giving orders verbally, he hesitates and makes mistakes, and does not inspire confidence. I think many officers will agree that it would be a good practice to initiate in the British as well as in the German Army.

The CHAIRMAN (Sir Frederick Middleton): I think after the very able and instructive lecture we have heard, you will all agree with me that the subject is a most important one, and one that I think has hitherto been too much neglected. The lecturer tells us that the writing of orders has for some time been a main point in the Staff College course, also that it has been considered in the case of the cadets of the Royal Military College. But I quite agree with what the lecturer says, that it is not staff officers alone who should be able to write out orders. Not only, as the lecturer says, do officers sometimes leave the regimental rank and become staff officers, but there are occasions when a second lieutenant might be called upon to issue an order; and I think, therefore, it is very evident that this should be studied regimentally, on some such terms as the lecturer mentioned, by every officer from the senior to the junior, and not only by those of the Regulars, but by those of the Auxiliary troops also. I consider it to be most essentially necessary that it should be made a regular branch of military study. I may remark on another point connected with this, though it is rather what Rudyard Kipling would call "another story," what I mean is the carrying of these orders when they are issued. That will afford a great deal of thought, and, I believe, at the present moment the Germans have a system which they are trying to introduce with reference to carrying orders. However, as I say, that is another story. With regard to this peculiar study, it appears evident that the autumn manoeuvres, or, in

fact, any manœuvres, would always afford a very excellent opportunity of testing officers' capabilities under this particular head. The lecturer has attached to his paper some excellent forms, and also rules, for compulsory orders in the field. The forms and rules seem to me to meet almost every exigency of the case. I would only remark with regard to one of the rules in which he warns people against the too indiscriminate use of "right," "left," "before," "behind," "front," and "rear." I think it would be advisable as much as possible to use the points of the compass in these sort of directions, or at any rate use them at the same time as the other, so as to prevent any conflicts of meaning. I would also accentuate what he says about the simplicity of language and clearness of orders, and that they should be written in simple language and without any attempt at what you call literary style. You are very often apt in indulging in that to make things a little doubtful. Everything should be sacrificed to clearness and terseness. I think it was Marshal Canrobert who warned one of his staff officers who was about to write some orders that he had given him, that he should write them with a firm conviction that those orders which he was then sending out would have to be read by at least one idiot, and I fancy that is a very good thing to bear in mind. There is sure to be some ass or other who will try and make a mistake, and therefore the clearer you put it the better chance you have of the orders being carried out. There are certain advantages certainly attendant, as the lecturer said, upon verbal orders. There are certain cases where probably it would be absolutely necessary in the first place to give verbal orders, but it would be very advisable if the first recipient of them wrote them down for further use. Word-of-mouth orders after they have passed two or three mouths are apt to get very much distorted, as I know from my own experience. I dare say some of you remember the game played by children, and sometimes, indeed, by grown-up, people. They sit round a table, and one person writes a few lines and whispers them to the next person, and the next person whispers it until it comes round again, and is again written down, when it is invariably found the last story written has apparently nothing whatever to do with the original lines. It is just the same with orders: they very often are apt to be completely upset and twisted quite the wrong way. With regard to making field orders as comprehensible as possible and as much as possible indicative of the intention of the general, there is no doubt that it must be a very admirable thing. It cannot always be done to a very great extent, still it may be sometimes done, so as to let everybody who reads those orders know what the general intention of the commanding officer is; and I cannot help thinking if that system was more carried out at our autumn and other manœuvres, it would have rather a good effect. The house where I was living lately was in autumn generally surrounded by skirmishers and troops of every sort and description—cavalry galloping across pits and tumbling into holes, and all that sort of thing—but whenever I have questioned any of the young officers as to what they were doing, the general answer I have got has been: "We have not the slightest idea what we are doing, and we have not the slightest idea what they want us to do." If that is the case with the young officers, it must be doubly so with the men; and I cannot help thinking if the orders were issued so that every man, even Tommy Atkins himself, had an idea of what he was wanted to do, it would have a very much better effect than their not knowing anything about it. I do not think I need detain you any longer. I am sure no word of mine will increase the value of the lecture which we have just heard, and I think I may be allowed, with your permission, to return your and my own most sincere thanks to Colonel Henderson for the able and remarkably interesting lecture he has delivered.

MOLTKE'S PROJECTS FOR THE CAMPAIGN OF 1866 AGAINST AUSTRIA,¹

(WITH MAP.)

By SPENSER WILKINSON.

ONE of the great difficulties of military history consists in the scantiness of the evidence usually accessible with regard to the working of the minds of those who on either side directed the operations. In some cases, we are obliged to infer a general's thoughts from his acts. Knowing the orders which he gave, and the operations which resulted from them, we construct for ourselves the process of reasoning by which we suppose that he was led to give them. Speculation of this sort is not entirely unprofitable, but it is only speculation at the best, for we can never accept without reserve an account of motives compiled after the events. Yet hypothetical explanations of this kind constantly find their way into theories of strategy.

The Prussian General Staff has no better tradition than that which devotes a part of its energies to its record of past campaigns. The so-called official histories of the three wars which brought about the unity of Germany were first contributions to the knowledge of those campaigns. They made no pretence to be history, for they avowedly attempted only to give such an account as could be compiled by the Head Quarters of one side, working with the limited materials available within a short time after the events; moreover, a very considerable reserve is imposed upon the contemporary narrator of military operations, for there is much, both in the political motives, which are always dominant in war, and in the personal relations between the principal actors, which cannot be made public at the time. The Prussian Staff history of the campaign of 1864 was not published until twenty-two years after the events which it describes, and it is therefore much more a history, and much less a mere official narrative, than that of the campaign of 1866, which was published in 1867. But no history, no continuous narrative, can give the same insight or carry the same conviction in regard to the motives of the actors as is obtained by a study of the actual

¹ Moltke's *Militärische Korrespondenz*. Aus den *Denkschriften des Krieges* 1866. Herausgegeben vom Grossen Generalstabe. Abtheilung für Kriegsgeschichte. Mit 1 Uebersichtskarte, 3 Plänen und 1 Text-skizze. Berlin: E. S. Mittler und Sohn, 1896.

documents forming themselves a part of the transaction. A new light was thrown upon the campaign of 1864 by the publication four years ago of Moltke's military correspondence during that war, a volume which revealed, as nothing published before it had done, the brilliant abilities and resolute character of the Prussian general. That delightful volume has now been followed by the publication of a selection from Moltke's military papers relating to the war of 1866. These papers, to some extent, lift the thin veil which in the Staff history half concealed the moving springs. They are divided into four parts, collected under the headings of preparation, mobilisation and deployment, the actual operations, the truce and peace. The chief interest of these disclosures lies in the first part, for it is the arrangements for the first deployment and subsequent concentration of the Prussian Army that have formed the principal subject of controversy in regard to this campaign. Moreover, since the construction of railways, the great importance which always in every campaign has attached to the opening has been, if anything, increased. The opening is usually arranged with a deliberation impossible in the subsequent stages of the action. It is the part of the game which admits of the completest study, and it is the part in which for this campaign abundant evidence is now given. Moltke's colleagues of the Staff have told us since his death that they were much impressed by his habitual effort to think things out, and that he used in this process to assist himself by putting his thoughts on paper, and re-writing his analysis or his argument again and again until he found it satisfactory. In the first part of the collection before us there are, besides a number of official letters, more than twenty of the memoranda in which Moltke cleared his mind with regard to the arrangements for the war against Austria. They enable us to trace through almost all its phases the growth of his plan of campaign.

As early as the spring of 1860, Moltke wrote a memoir upon the deployment of the Prussian Army in case of war against Austria. It is, of course, based upon an examination of the then existing political situation, and of the condition of the Austrian and Prussian Armies at that date, when King William I. was still Prince Regent, and while the Army re-organisation, of which he was the author, was in process. It begins with a review of the political situation, which is worth translating.

"A war between Austria and Prussia would affect all the Powers of Europe; for a considerable success of the one or the other would end the present disintegrated condition of Germany, subject the small States to the victor, and found in the centre of Europe a united State, which would be equal or superior in power and influence to any of its neighbours.

"Among the great Powers, England necessarily requires a strong ally upon the Continent. It would find none which would better correspond to all its interests than a united Germany, which can never claim the command of the sea, but which by a strong central position between the Romance West and the Slavonic East secures for all time the greatest imaginable stability upon the Continent. A far-seeing policy of the

cabinet of St. James would necessarily support such a transformation, and out of consideration for the ties of kindred and of religion use its influence in behalf of Prussia. Yet it is probable that England, clinging to the old order, would take the side of the party attacked, in order to prevent a political remodelling of Europe, of which it must be admitted that the far-reaching consequences cannot in all their bearings be foreseen.

"For direct interference in the contest, England could use only her fleet, and a weak army to be landed on the Continent. Her hostility would destroy our trade and devastate our ports, but both these forms of damage together would not suffice to endanger the existence of the State. The friendship of England, on the other hand, would protect our coasts, and might furnish the kernel for the formation of a Belgian auxiliary army. But even this limited effort of assistance becomes doubtful the moment that the interests of France are on the opposite side, because then Britain requires all her forces to protect herself.

"And this case arises immediately if war breaks out between Austria and Prussia.

"France least of all can wish, as the outcome of this conflict, for an Empire of the German nation, comprising seventy millions of inhabitants, but from the conflict itself may hope for the very greatest advantages—the acquisition of Belgium, of the Rhenish Province, and perhaps of Holland—indeed, these advantages may be looked for almost with certainty if Prussia's principal forces are held fast upon the Elbe and Oder. Moreover, inasmuch as Prussia only, and not Austria, defends those Rhinelands, an alliance with Prussia could have no direct object for France. It would better correspond to the Austrian interest to sacrifice territory in the German West if thereby in the East the Austrian dynastic power can be fixed upon lasting foundations.

"These same reasons would, without doubt, suffice to induce Russia to take Prussia's side. However much Russia may desire extension along the Southern coast of the Baltic, her main interests are towards the East. The uninterrupted internal decay of the Ottoman Empire offers there between the fairest seas the richest lands, whose inhabitants of kindred race and faith have been awaiting for centuries the entry of the blonde nation into Byzantium to raise once more the Grecian cross upon the dome of St. Sophia. The realisation of the plans formed even in her day by the great Empress Catharine could be prevented in the long run by none of the Maritime Powers, but only by Austria. Accordingly, nothing is so contrary to the interests of Russia as a considerable extension of the Austrian power.

"But for Prussia the help of Russia has always the two-fold disadvantage that it comes too late, and is too powerful. Moscow, which we may regard as the centre of gravity of Russia, is as far distant from Berlin as Madrid or Naples. The Russian Army is spread over a surface of a million square miles. It concentrates slowly, and has from the Volga to the Vistula 1,400 miles of country without a railway to pass through. The might of the Russian Army will arrive at our frontier

when we shall either have conquered, and, therefore, no longer require help, or shall have been defeated, and must pay dear for it with provinces. For Russia, if she comes in at the end of the campaign with a fresh army of 300,000 men, is mistress of the situation, and has the chief share in deciding the limits up to which we may make the most of our success, or must submit to our misfortune.

"Great importance, in a war between Austria and Prussia, attaches to the behaviour of the minor States, for their help is in part quicker than that of Russia, and more momentous than that of England.

"For Belgium it would be of much value if a British auxiliary corps, even a weak one, landed at Antwerp, should furnish the nucleus for the collection of her own forces. Belgium must say to herself that France, if it intends to conquer the bank of the Rhine, cannot respect Belgian neutrality, and that the possession of the Rhenish Province without the possession of Belgium is inconceivable. The assembly of the Belgian forces at Antwerp leaves open to the enemy the country and the capital, of which the reconquest is possible only by Prussian forces, and in the same way the Netherlands can seek help only from Prussia.

"In Italy, things are as yet only developing, but even now it is clear that in all circumstances we shall have in Sardinia an ally against France as against Austria, and most certainly against both if they act in concert. Our interest seems to demand the utmost strengthening of this newly-reviving Power. Denmark, too, if the question of Schleswig-Holstein were settled, would be the natural ally of Prussia. Until then, it must be regarded as an enemy, but will probably remain neutral on account of internal dissensions. Switzerland and Sweden will take no action.

"The situation of the small German States is peculiar. Their whole existence is based upon the jealousy between Austria and Prussia. So soon as this tension is relaxed, either by union or by war, they see in either case their existence threatened. Neutrality is not possible, at least, not to them all; it leads to the immediate occupation of their territories. If the Power which they join is victorious, it gains such a preponderance, that, even though their existence may have been guaranteed as the price of their co-operation, they must in the long run disappear in a re-arrangement corresponding to actual power. If their ally is defeated, they fall with him a prey to the enemy.

"The German States have thus just as much to fear a complete union as a serious breach between Austria and Prussia. If the latter should occur, they must take sides, and their choice will be determined above all things by their geographical position.

"To no human intelligence can it be given to trace in advance the course of such great political events, upon which not only the permanent interests of States, but also the sympathies and antipathies of rulers, the insight and energy of cabinets at the critical moment, and internal disturbances or popular risings often exercise an effective, though incalculable, impulsion. Yet the following points may be assumed with some degree of certainty:—

"A war between Austria and Prussia will draw all Europe into the conflict.

"France is to be regarded as Prussia's enemy, and will aim at the conquest of all the Rhine-lands, which Austria will not oppose.

"Russia, and probably England, too, will be on Prussia's side, but the direct help of the one does not become available until late, that of the other will have no decisive influence.

"In Belgium and Holland, as in Italy, there will be help for Prussia.

"The North German States cannot, without immediately renouncing their existence, evade co-operation with Prussia; Saxony alone, at least its Government, can, and will, certainly stand with Austria.

"The South German Courts, on the other hand, will probably form a neutral league, not despising the protectorate of France; for in a war between the members of the German confederacy, the fundamental laws of the confederacy can have no validity.

"If it comes to a breach between Austria and Prussia, there may arise from the conflict, according to its issue, a powerful empire under the rule of Habsburg or of Hohenzollern; but Germany will have to pay for this eventual unity by the loss of provinces in the East and West.

"The result, which we require to enable us to form a judgment of the initial military situation, can be reached only along the slippery but inevitable path of political speculation. It is enough, however, to see:—

"1. That Austria, in a war against Prussia, cannot completely denude the defences of her Eastern frontiers.

"For although it is true that the weight of Russia's forces does not begin to tell until a late stage, yet Russia has at all times forces enough at hand in the kingdom of Poland, in Volhynia, Podolia, and Bessarabia to create most serious embarrassments for the Austrian Empire by taking advantage of the disaffection which prevails among the Hungarian and Slavonian populations.

"2. Another part of the Austrian Army will be fully occupied in Italy.

"For although, during the conflict against Prussia, Austria cannot think of the reconquest of Lombardy, she will still have to defend Venetia against Piedmont.

"3. But Prussia in her turn will not be able to bring up her two army corps from the Rhine to protect the Marks and Silesia.

"These corps will operate upon the Rhine in connection with Belgian, Dutch, and probably English, auxiliaries.

"4. The contingents of the 10th Federal Corps can be counted upon only to observe Denmark or, if the case should arise, to form a support on the Rhine; for the advance of the French there endangers Hanover and even Oldenburg.

"On the other hand, Prussia can freely dispose of all the seven army corps of her Eastern provinces.

"If one or another of the remaining German States should join Prussia that will be a help which has not been counted upon in advance."

The results of the political enquiry are next applied to a calculation of the forces available on both sides:—

	Men.
Austria cannot possibly leave in Italy less than - -	95,000
nor on her Eastern frontier less than - : - -	72,000
and as neither of these forces would be locally sufficient she will probably hold in reserve to send either to Italy or to the Eastern frontier, as the case may be, the 7th corps now at Treviso - - - - -	40,000
while she must keep up as garrisons in Dalmatia, Croatia, etc., and in the fortresses of the German Confederation - -	40,000
Total - - - - -	247,000
Balance available against Prussia - - - - -	235,000
Less garrison in Bohemia and Moravia - - - - -	40,000
Balance - - - - -	195,000
Add Saxon Army - - - - -	25,000
Total - - - - -	220,000

To assemble this force on the line Prague—Olmütz will require about four weeks, and to concentrate it on the upper Elbe a somewhat longer time, probably not less than six weeks altogether. The Saxon Army could be ready at Pirna in a fortnight, and it would be possible for the Austrians, before their whole force was ready, so to reinforce the Saxons as to be able to take the offensive after four weeks with 100,000 men.

Moltke proposes to assemble the seven Prussian corps at the following places:—

- IV. Delitsch and Halle.
- III. Torgau and Herzberg.
- II. Wittenberg.
- I. Jüterbog.
- G. Baruth.
- V. Spremberg.
- VI. Striegau and Schweidnitz.

From these points it will be possible in two marches to concentrate at Torgau-Herzberg 165,000 men, or at Dresden in five marches 198,000 men. In the latter case IV., III., and II. would advance on the left bank of the Elbe; I., Guard, and V. on the right bank, seeing that either force will be stronger than anything which the enemy can possibly have assembled in time at Dresden. The Saxon Army, if it holds its ground, should be at once attacked, and Dresden occupied and fortified either for defence or for a further offensive. The six Prussian corps would then advance into Bohemia on the right bank of the Elbe, the VI. Corps co-operating with them through Trautenau. Then follows a very careful exposition of the strategical motives upon which these proposals are based. It is so admirable an example of Moltke's way of considering such questions, that the more important part of it must be given in full:—

"If Prussia intended an *aggressive* war against Austria she would assemble her army in Silesia, of which the frontier is distant only 140 miles from Vienna. Berlin would be sufficiently protected by an army corps at Torgau, and in less than six weeks 200,000 men would stand facing the Sudetes ready for invasion.

"Possibly Austria might be completely surprised, but it would be well to consider whether, in opposition to the power of the Empire, which increases for resistance with time, Prussia would be able to maintain her initial success, for it must be remembered that the strategical offensive, differing in this from the tactical offensive, undoubtedly presupposes a far greater development of force than the strategical defensive.

"Moreover, in that case very different political conditions would present themselves than those which were assumed in the preceding study, neither Russia nor any other Power, except perhaps Sardinia, would support aggressive action on the part of Prussia.

"An aggressive war, however, lies altogether outside the bounds of a study which contemplates, in the first instance, only territorial defence in the narrower sense. We have here to consider only the case of Prussia being attacked by Austria, which, however, in no way excludes that kind of offensive that may develop from the measures adopted in the first instance for defence.

"If the purpose of Austria in the war is the overthrow of the Prussian monarchy, she will operate with her principal army directly towards Berlin, which is only ninety-four miles from the Southern frontier.

"The occupation of our capital by the enemy cannot indeed decide the campaign, but the material and moral disadvantages involved in the loss of Berlin do not require to be pointed out.

"A rapid advance of the Austrians to this important point of junction of all our railways and principal communications will interfere with the assembly of our corps approaching from the East and the West. Berlin itself is not fortified. An army told off to defend it against an attack from the South is confined to a narrow strip of ground in its front; if it is thrown back beyond Berlin a few marches bring it to the sea. Our whole theatre of war has a depth of only 187 miles. No third fortress closes the space, 140 miles wide, between Torgau and Glogau, none of the great rivers which offer protection against the East and the West bars the advance of the enemy in this direction.

"If Austria aimed at an object of less magnitude it would probably be the reconquest of Silesia.

"The capital of this province, too, is not fortified, and can be reached in a few marches from the district where the Elbe rises. Schweidnitz in its present condition cannot be defended, Glatz can be rendered harmless by the occupation of the mountain passes, Neisse and Cosel are fifty-six and eighty-four miles away from the enemy's line of advance.

"But it would be more difficult for the enemy to keep his position in Silesia. By his march upon Breslau we gain time to collect all our forces on the middle Oder, and if the possession cannot be rendered secure without the defeat of our army in the field Austria will do better at once

to seek that army in the direction of Berlin and to conquer Silesia in Brandenburg.

"This is the shortest way to the most complete and rapid decision, and it is conceivable that the Austrians should set all their forces in motion towards this one goal, neglecting Silesia for the time. But we shall see that a rightly-conducted defence will, after all, compel the enemy, as he continues his advance towards Berlin, to extend his base so as to include Silesia. And, as it is always important at the final conclusion of peace to be in actual possession of the land which you intend to keep, and as a serious menace to the capital is extraordinarily facilitated by the occupation of Silesia, and the possession of its rich resources, it follows that the most advantageous, and, therefore, most probable, plan, is for Austria to direct the principal operation against the Marks, and at the same time a minor operation against Silesia.

"From Bohemia, Austria threatens alike Silesia and the Marks. A concentration of the Austrian Army behind the Giant Mountains and the Mountains of Lusatia, keeps us until the last moment in uncertainty of the enemy's intentions. The direction of the railways and the fertility of the country favour the advance and the supply of large masses of troops. Mountain ranges cover the concentration, Theresienstadt, Prague, and Josephstadt protect the railway lines and magazines, which can be filled from the richest cornfields of the Empire. Lastly, an army assembled in Northern Bohemia guarantees for the policy of Saxony the necessary backing, and for her army a near support or protection in case of retreat.

"It can, therefore, scarcely be doubtful that the first assembly of the Austrian Army destined to act against Prussia will take place upon and in front of the line Prague—Pardubitz.

"If the Austrians, with their main force, should advance on the left bank of the Elbe, they would come upon our line of fortresses, Torgau—Wittenberg—Magdeburg, and we, acting from a central point should render very difficult for them their subsequent passage of the river. They will, therefore, to facilitate their first deployment, make use of the left bank only so far as they are masters of the Elbe, that is, in favourable circumstances only as far as Dresden. Their chief line of march lies on the right bank, and leads through the Lusatian Mountains. The army advancing by this route against the Marks remains also in the closest possible connection with a minor army advancing through Trautenau against Breslau. Upon the front, only 56 miles long, between Teplitz and Reichenberg, both of which end points are reached by the railway, there are seven good roads for the passage across the mountains: Teplitz—Dresden, Aussig—Pirna, Tetschen—Schandau, Kamnitz—Schluckenau, Haida—Rumburg, Gabel—Löbau, Reichenberg—Görlitz.

"Thus, only three days after the declaration of war, there may be of these columns: 3 at Dresden, 3 at Bischofswerda, 1 at Görlitz, or 1 at Dresden, 5 at Bautzen, 1 at Görlitz, according as the position of the Prussian forces makes it desirable to act with stronger forces upon the Elbe, or upon the upper Spree. One additional march suffices to unite almost the whole force between the two rivers named if the approach of

a decision should render this necessary. Further towards Berlin lead, it is true, only two metalled high roads, that from Dresden by Herzberg, and that from Bautzen by Cottbus, which at the named points are 47 miles apart, and only then begin to converge again. But the country is in general passable, and between the two high roads there are roads suitable for vehicles from Radeburg to Schlieben, from Königsbrück to Dahme, and from Kamenz to Luckau. At the river Dahme all these roads pass between the Black Elster and the Spree-Wald, which are only 21 miles apart. It would be practicable to push forward an advance guard along the central one of these roads so far in front and in such strength that it could, even though giving ground, resist a hostile attack from the North for twenty-four hours, in order to gain time for the other columns to concentrate at Dahme, Finsterwalde or Ruhland. If the enemy's attack came from the West the left wing column, marching along the Herzberg high road, would have to cover the other columns, and to fall back upon them if necessary. No doubt in that case this road would be lost; in any case it passes too near to the fortresses on the Elbe for the invading army to be able to count very much upon it. But on account of the distance of the Cottbus high road the concentration of all the forces for a decisive battle cannot be effected in one day; if the opponent presses forward vigorously, the second and the third roads will be lost, and the Cottbus road itself threatened. It thus becomes clear how important for the Austrian attack is the possibility of a retreat upon Silesia. No doubt this implies that the subordinate army from Trautenau has at the same time reached at least Liegnitz, has driven the defender back upon Breslau, or, in case he uncovers Breslau and retires upon Glogau, keeps him sufficiently occupied and secures for the principal army the line of communication through Bautzen and Görlitz.

"If in the preceding paragraphs the operations most advantageous for the Austrians, which therefore they will most probably select, has been correctly ascertained, the main outlines of the most effective defence may be deduced from it.

"Our political frontier towards the South stretches from Berun to Erfurt, about 470 miles. The better front of defence passes behind the Giant Mountains and the Erzgebirge, and has almost the same extent. The enemy from Prague can reach Schweidnitz and Torgau in about the same time. Roads and railways assist the advance in both directions. If it were possible to defend a line of this extent from a single point, Görlitz would be the place of assembly for our forces, based upon the largest part of the monarchy and connected by railways with Breslau, Posen, and Berlin. But we have already seen that the districts threatened have a very different value for us, and that we may expose Silesia to a temporary invasion, while the occupation of Berlin would involve very serious disadvantages. However favourable the prospect of success, we could not march into Silesia against the minor army advancing through Trautenau without leaving the Marks entirely open to the enemy's principal army, and, seeing that neither the concentration of the Austrian Army in Northern Bohemia, the establishment of magazines there, nor

even the partial crossing of the frontier, will give us any definite indication of the direction in which the enemy is aiming his principal blow, we are compelled so to arrange our first concentration that it can immediately oppose the more dangerous of the two operations of the enemy by a defensive which will not exclude a subsequent offensive.

"The first concentration of our principal force must, therefore, be placed further West than Görlitz and nearer to the Elbe, and Silesia must be protected by a separate portion of the army.

"We have now at once to decide whether we choose the direct or an indirect defence of the capital. If we choose a position anywhere between Bohemia and Berlin with our retreat to Berlin, we can on the defensive keep the enemy at a distance from the capital only by accepting at some natural or artificial line of defence a frontal battle. If in this battle we are defeated by the enemy's superior numbers, we shall lose not only the battle but Berlin as well, and run the risk, if vigorously pursued, of being driven back to Stettin. If Berlin were fortified in the style of a great entrenched camp, it might well be assumed that the enemy's movement would there come to a standstill, the more so as he must invest Torgau and Wittenberg. But in that case we, too, should be tied to Berlin; we should have lost a considerable belt of territory, and the enemy could meanwhile complete the conquest of Silesia.

"The conditions are quite changed if we arrange for a retreat not to Berlin but behind the Elbe.

"We do not believe that a flank position behind the Elbe will hold the enemy spellbound or hinder him from advancing past it towards Berlin, but we expect this result from an offensive based upon the Elbe.

"It was shown that any attack from the West compels the enemy to front towards the West, to collect his forces on one of the more Easterly parallel roads, to abandon the most direct road, the high road through Jüterbog, and to look round for other communications towards his rear, because in this new situation ours all lead us on to his left flank.

"If the offensive stroke delivered from the Elbe succeeds, it drives the enemy away from Bohemia, and back upon the, as yet, unconquered Silesia. If it fails, we shall find behind the river a more complete and nearer protection than by retreating Northwards, and the strong places secure to us the possibility of again advancing across the river after the shortest respite.

"This indirect defence will last the longer the higher up the river it begins, for if we were compelled to withdraw to the left bank at Dresden or Riesa, we should still be able to advance again on to the right bank at Torgau or Wittenberg. It will be the more effective the further down stream it is continued. For from Wittenberg, where our own retreat will be secured, we shall be operating directly upon the rear of the enemy who has advanced against Berlin.

"This, however, presupposes that Berlin itself can be protected for a few days, either by fortification or by the occupation of a line of defence to the South of the city. If that were not the case, the indirect defence

would end at Wittenberg ; it would have then to pass into direct defence, that is, we should have to hurry to reach Berlin before the enemy.

"Here comes out clearly the importance of a protection for the capital by works of some kind, without its being decided whether this should be effected by the fortification of Berlin itself, or of some position further South.

"If the line of the Nuthe and the Notte can be so prepared that it can be held even for a short time by a comparatively weak corps, that course is strategically to be preferred even to the fortification proper of Berlin. For this line covers Berlin and Potsdam at the same time, and as it is only two marches from Wittenberg its existence increases the swift and powerful effect of an operation based upon that fortress, and if necessary also upon a bridge head at the mouth of the Elster.

"It will be seen from these considerations that, though our first concentration is assumed on the Elbe, we by no means intend to choose it behind the river upon the left bank. There, if we remained passive, we should probably not be attacked at all ; we should be compelled to advance to the offensive and we shall therefore do better at once to assemble our troops on the right bank, only with the conscious intention, in case retreat should become necessary, to retire not towards Berlin, but across the river. It is, of course, evident that if in every offensive advance we attack the enemy on his flank, that is, in a direction which, in case we succeed, drives him away from his base, we too on our side in case of failure shall be driven back in a direction which would separate us from the bulk of our own territory. But the difference which here tells in our favour is that a great river with protected crossings immediately stops the pursuit in a direction which would be ruinous for us and enables us to renew our advance, and this is the exceedingly great advantage in which we find ourselves and of which the enemy is devoid. No group of fortresses would be able to secure for us the advantage which in this case a line of fortresses procures, especially if Dresden as a fortified point should also be in our power.

"If we can occupy Dresden earlier than the Austrians and can there establish ourselves, we should compel Saxony to go with us. If she did not, the Saxon Army must either withdraw into Bohemia or once more shut itself up in a fortified camp at Pirna ; in either case, we should lay hands upon the rich resources of the country. If our principal force is assembled at Dresden (in this case on the left bank of the Elbe) the enemy cannot venture during his first advance through the mountains to employ the roads on both sides of the river—he must decide for one or the other bank. If he chooses the left bank we shall find opportunity when he debouches from the Erzgebirge to take the offensive against his columns separated by the deep rocky valleys. If, in spite of that, he succeeded in uniting them we should withdraw through Dresden, and the enemy would have to force the passage at some point in the face of our army. If the Austrians, as is probable, confine themselves only to the roads through the Lusatian Mountains from Kamnitz to Reichenberg then the menace to their left flank and to their communications with Bohemia

begins already from Dresden. That they should operate from Görlitz behind the Spree and the Spree-Wald against Berlin is not to be apprehended, for our base on the Elbe allows us to follow them in the direction of Spremberg. The line of the river with its fortresses offers us far greater advantages by lying parallel with the direction of the enemy's operations than if it formed a barrier crossing that direction.

"That in the active defence based upon the Elbe decisive battles must take place immediately, is in no way to be regarded as a disadvantage. It would be a complete mistake to wish to save up our army. Once we have our corps together, there is nothing to be hoped for from further waiting; on the contrary, it would be very difficult to supply them long in that close concentration which is necessary for battle, and we cannot quickly enough bring about the decisive actions. The main decision must take place South of Berlin, and it is therefore of the greatest importance to be as strong as possible there. Still we shall not leave Silesia entirely unprotected, even if it were only in order not to allow the enemy to use this province as a safe base for his main operation."

The only remaining question is the amount of force required for the protection of Silesia. Moltke thinks one corps sufficient, for if the main attack of the Austrians takes the direction of Berlin, they can spare only a small force to attack Silesia, while if their main army moves upon Breslau, the main Prussian attack will act against it. The one Prussian corps must be posted near Striegau, on the line between Josephstadt and Breslau, and its retreat will be chosen not upon Breslau, which is unfortified, but upon Glogau.

Here, then, we have as early as 1860 Moltke's fundamental idea. His object is to collect as much of his force as possible into a single army, from which he will make no unnecessary detachment. He is obliged to take away two corps to parry the attacks of France and the South German States, and one to meet the possibility of the Austrians choosing an advance into Silesia, which, though it is less dangerous than an advance upon Berlin, might be embarrassing at the outset of the campaign. His immediate object is to be ready in strength to repel the most dangerous blow which the Austrians could possibly deliver, and he has thoroughly thought out all the necessities of the defensive. But the plan contemplates the earliest possible passage from the defensive to the offensive, which is to be conducted by an advance on the right bank of the Elbe, that is, between the river represented by the line Dresden—Prague and the parallel line of the Giant Mountains. So soon as the offensive begins, this direction facilitates the co-operation of the VI. Corps from Silesia.

(The German text on page 8 speaks of the co-operation of the V. Corps through Trautenau, but V. must be a misprint for VI.)

The plan thus worked out in 1860 is the basis of all Moltke's subsequent deliberations during the next six years, and although the plan actually adopted appears at first sight to be quite different, it is, in fact, only a modification of the original design caused by a close study

of the actual arrangements of the Austrians, and by a thorough analysis of the possibilities of their action based upon those arrangements.

In June, 1862, a different political situation arose. The Prussian Government sent an ultimatum to that of Hesse, and there was, for a few days, a possibility that Prussia would be suddenly compelled to fight all her enemies at once, including France. Moltke decides that if war should break out he must use four army corps against France and South Germany, and that he will collect the remaining five on the Northern border of Saxony, seize Dresden, and take the offensive into Bohemia through the passes of the Lusatian Mountains. The short memoir in which this plan is discussed shows Moltke at his best, for his character is only half revealed, except in the face of a great emergency, such as he was here prepared to face. It is followed by a paper examining minutely the mode of operations to be adopted for the capture of the Saxon Army, the plan starting from a close examination of Frederick the Great's operations for the same object in 1756.

In the winter of 1865 to 1866, Moltke again works out his plans for a war against Austria, again starting from the political situation at the time. He now assumes that, at least at the beginning of the war, France will not move; he counts upon a larger portion of the Austrian Army than in 1860, expecting them to have available against Prussia 240,000 men, who will be reinforced by 25,000 Saxons. He presumes that the Austrian objective will be Berlin, and proposes to resist it by striking upon the Austrian flank with an army based upon the fortresses of the Elbe. He considers that he requires one corps, VIII., at Mainz, to keep South Germany quiet, and that he will have eight corps available against Austria. The question is: Where shall he concentrate his main force—in Lusatia, or in Upper Silesia? Upper Silesia would be the place of assembly nearest to Vienna, and would be suitable if the object were the immediate offensive. But an offensive of that kind involves that the army which undertakes it shall be ready first in superior force; he considers that the Austrians can assemble in Northern Bohemia in about the same time as the Prussians in Lusatia, but the Prussian assembly would be delayed if the district chosen were in Upper Silesia, while the Austrian assembly would be speedier if the place of concentration were in Moravia, to protect Vienna against the Prussian offensive. Accordingly, if Upper Silesia were chosen, the Prussian Army would not be first ready in superior force. Moreover, eight Prussian corps—247,000 men—are not a force strong enough for a prolonged offensive towards Vienna, and the position in Upper Silesia is too far away to give the certainty of preventing an Austrian advance through the Lusatian Mountains upon Berlin. Upper Silesia, therefore, must be rejected, and the choice is between assembling the army behind the Giant Mountains or behind the Lusatian Mountains. The position behind the Lusatian Mountains is better, because these mountains have a better set of roads favouring a Prussian advance, and because if the army is placed here there is no need for a separate force to prevent an Austrian advance towards Berlin. Moreover, the army if defeated in Lusatia can retreat across the Elbe, and if victorious has before

it a clear road to Vienna, unprotected by fortresses; whereas an army placed behind the Giant Mountains, if beaten, gains no advantage for the defence of Berlin by retreating across the Oder, and if victorious must weaken itself during the advance towards Vienna by detachments to observe the fortresses of Olmütz and Brünn.

In order to concentrate the Prussian Army on the line Dresden—Görlitz, Dresden must be seized at once. For this purpose a force must be sent forward on the day that mobilisation is ordered, without waiting for its reservists. The army can then be ready on the line chosen in fourteen days after mobilisation is complete. Half will assemble at Dresden and the other half at Görlitz, and these two halves can unite for defence in two days at Bautzen, for attack in three days on the Iser. The points of assembly for the Prussian corps are:—

VII., IV., and G.—Dresden and East of Dresden.

I., II., and III.—Görlitz and West of Görlitz.

V. and VI.—Freiburg and Schweidnitz.

If the Austrians advance towards Berlin there will be a decisive battle at once. If, instead, they advance into Silesia, V. and VI. will retire towards Görlitz, and the main Prussian Army will either march West through Görlitz to meet the Austrians, or will advance through the mountains into Northern Bohemia, and thus compel the Austrians to form front to a flank.

It will be seen that this plan is substantially the same as that of 1860. The Prussian Army is to advance in the general direction Löbau—Königgrätz. Moltke now expects to employ eight corps instead of seven against Austria, and uses the additional corps to reinforce his minor army in Silesia. This is the beginning of a modification of his plan which leads him gradually to strengthen his left wing at the expense of the right wing.

In the course of February, the relations between Prussia and Austria became so strained as to make war seem inevitable. On the 28th of February there was a council at Berlin in which the question was considered whether Prussia ought at once to arm. Moltke's opinion was that it was not yet necessary. The reasons for this opinion he had worked out in a paper dated February 22nd, in which he calculated that the Austrians could assemble in Northern Bohemia:—

In twenty-one days	-	-	100,000 men
In twenty-eight days	-	-	150,000 „
In thirty-six days	-	-	200,000 „

and that eight more days would be required before they could cross the frontier, making in all six weeks from the date when the Austrian mobilisation should be ordered before they could attack in earnest. He thinks that Prussia may wait with the order to mobilise until there is conclusive evidence that the Austrians have begun the process, evidence which will consist in the purchase of horses on a large scale and the transport of reservists to Italy. This paper contains the first of a series of careful calculations as to the time within which the Austrians can place a given force at a given point.

Early in March, we find Moltke discussing with Bismarck the conditions of a treaty with Italy. He proposes that both parties shall pledge themselves in case of war with Austria not to lay down their arms nor to make peace until each of them has attained the object of the war, which he defines in the words: "Not merely that Venetia and Bohemia shall be in the occupation of the allies, but that Austria shall have acquiesced in the definitive cession of these lands." From this passage, taken in connection with the political sketch of 1860, it must be inferred that Moltke's estimate of the political results to be obtained by the war was very much higher than Bismarck's, for Moltke's language implies that he expected Prussia, if victorious, to annex all the small German States and Bohemia. This is a point which, in considering the events of 1866, must never be lost sight of. Moltke's position was merely that of an adviser to the King, and his absolute loyalty, carried almost to self-effacement, is perhaps the noblest trait of his character. So far did it go, that as long as he lived Moltke was ready to sacrifice his own reputation to that of his master. He knew, of course, that his papers were preserved, and that the truth would sooner or later be known. The truth is that Moltke had a clearer eye and a stronger purpose than Bismarck himself. It is the fate of every great man that his greatness can never be fully appreciated by anyone of smaller mould. Neither the King nor Bismarck dared risk themselves upon Moltke's judgment; had they done so, they would have played a bolder game for higher stakes, and would in all probability have gained an even more splendid success than they did.

On the 28th of March another council was held. The paper which Moltke wrote as a preparation for the opinion which he then gave begins: "Austria has taken the initiative in the preparation for war, and thereby gained the advantage of being able to assemble an army in Bohemia in less time than we shall require to place an equal force at a single point in opposition to it."

"Even if we had at once replied with preparatory or partial measures, this could not have been avoided. It is the result of the readiness for war—of the distribution—of the Austrian forces, and of the first resolve."

Here we have the first hint, of which the clearness is unmistakable, that Moltke thought the war inevitable and that the right course was to have taken the initiative at once, and to have struck down Austria before she could be ready. There can be little doubt that the hesitation to adopt this course came from the King. Moltke accepts this hesitation; he calculates that at present the utmost Austria could do would be to undertake a premature and hurried advance towards Berlin with 100,000 men. He shows that no very great harm can come from such an attempt, and sketches the minor measures which he holds to be now desirable to guard against such an eventuality, which he will meet by the offensive defence based on the Elbe, projected in 1860. He now contemplates bringing the VIII. Corps also to the principal army, that is, using all the nine Prussian corps against Austria. The minor measures proposed in this paper were ordered next day.

On the 30th, he makes a careful review of the progress of the Austrian armaments. He thinks that a small force should be assembled at Görlitz without delay to prevent an Austrian raid in the direction of the important railway centre at Kohlfurt, and that, if the Austrian armaments continue and if policy still prevents the mobilisation of the whole Prussian Army, the V. and VI. Corps at any rate ought to be mobilised without any further delay. In this paper he is decidedly of opinion that Prussia ought not to delay by another day the mobilisation of her whole Army.

On March 31st, he again examines what the Austrian measures already taken will enable the Austrians to do. If mobilisation is now ordered simultaneously in Berlin and in Vienna, our force when ready will be undoubtedly very superior to that which the Austrians can have ready by the same time, and the defective railway system of Austria will give us all the great military advantages of the initiative. In twenty-seven days we shall have in the field 285,000 men, while the Austrians will not yet have 175,000. But Prussia must be careful not to choose for the assembly of her corps points which could be reached by the Austrian forces already assembled in Bohemia. The points threatened are Görlitz and the part of Silesia between Breslau and Josephstadt. Moltke proposes to assemble the 9th Division at Görlitz, the 11th at Freiburg, and the 12th at Frankenstein, in order to cover the assembly of the Prussian corps in those districts.

On the 2nd of April, he thoroughly clears his mind upon the situation as it stands at that moment, and works out a memoir of which the substance is that success depends upon Prussia's resolving to fight before the Austrians have made up their minds, and if possible immediately. Prussia with five railways can place her army on the frontier in 25 days, while Austria needs 45 days to collect 200,000 men. There have been reports that Bavaria is arming. Moltke thinks the Bavarian Army of no very serious importance, and that the only grave danger to be apprehended from Bavaria's deciding to act with Austria is that she may lend the Austrians her railway from Regensburg to Pilsen, and thereby enable them to shorten by 15 days the time required to bring up their army into Northern Bohemia. He is now quite determined to use all the nine corps against Austria.

Next day, April 3rd, he writes a short note to Roon, of which he sends a copy to the King. It contains the detail of his calculation of the forces available on given dates. The important passage is: "If we start with the actual situation of to-day, and assume that both sides begin to mobilise at the same time, the forces available on each side, beginning from the first day, will be as follows:—

	Austrians.	Prussians.
On the 8th day - - - - -	50,000	
On the 14th day (add 24,000 Saxons) - - -	74,000	33,000
On the 18th day (43,000 men from Galicia, Moravia, and Austria) - - - - -	117,000	143,000
On the 25th day (42,000 men from Austria and Hungary) - - - - -	159,000	285,000

	Austrians.	Prussians.
On the 28th day (20,000 men from Austria and Hungary) - - - - -	179,000	285,000
On the 42nd day (60,000 men from Austria and Hungary) - - - - -	239,000	285,000

"Accordingly, the chances for Prussia lie between the 18th and 42nd days.

"Every day during which Austria arms, while we do not, must be deducted from this incomparably important period of operations."

This letter frightened the King. Roon was evidently afraid that instead of inducing His Majesty to act at once, it would have the effect of disposing him to delay or to make peace; and he writes to Moltke begging him to say something reassuring to the King. Moltke replies: "That the Austrians, if we give them time, can bring together almost as many troops as we can is nothing new. I have explained this in all the conferences that have been held. The essential point, however, is not the number of troops, but the time within which they are available on each side. The object of the table at the close of my letter was to make quite clear the manifest advantages which we shall have for a period of three whole weeks if we take the initiative, or at least mobilise not later than the Austrians.

"It can be no one's intention to persuade the King to undertake a war like this, but only to render it easier for him to make up his mind by truly and clearly explaining the real situation."

On the 3rd of April, the day of the note to Roon and the King, Moltke worked out the various possible openings of the campaign, starting from the assumption that Austria orders mobilisation on that day, and that Prussia delays the order until April 15th. He first assumes an Austrian offensive towards Berlin, and satisfies himself that the arrangements he contemplates must render it quite hopeless. Then he examines an Austrian offensive towards Breslau, and convinces himself that it must come to a standstill in front of Glogau by April 30th. He next analyses the situation on the assumption that both sides order mobilisation on the same day, and that the 9th, 11th, and 12th Prussian Divisions are ready at the points selected by him in his memoir of March 31st. He examines the possibilities of an Austrian offensive directed against Silesia, or through Görlitz, or down the bank of the Elbe. In any case, the numerical conditions must be fatal to the Austrian enterprise. Then he analyses the conditions in case the Austrians remain on the defensive in Saxony, in Northern Bohemia, or in Moravia. The result is, that in every case but the last Prussia will have at the decisive battle a greatly superior force. But he thinks it improbable that the Austrians will keep their main army waiting at Olmütz to be attacked, because such a course involves the sacrifice without a blow of all Bohemia.

On the 9th and 10th of April, he again works out the possibilities on the assumption that both sides mobilise on the same day. His plan of assembling the army remains substantially the same as in the winter, but he starts further back, before the projected invasion of

Saxony, and includes the VII. Corps from the Rhine Province. The Guard which, being recruited all over the monarchy, requires a longer time than any other corps to call in its reserves, he assembles at Berlin, and fixes at Halle the point of assembly of IV., VII., and VIII. As before, I., II., and III. are at Görlitz, and V. and VI. near Schweidnitz. He works out first the Austrian offensive against Berlin. This would leave the Austrians just equal to the Prussians in Silesia and in Lusatia, but the Prussians would have over, without any Austrians in front of them, IV., VII., VIII., and the Guard. Thus the march on Berlin would be fatal to the Austrians. In order to protect Berlin no change in the Prussian plan is required, except to place an advance guard of the Guard at Jüterbog. The Austrians might try an advance on the left bank of the Elbe to disturb the Prussian concentration at Halle or Torgau. To prevent this, he will occupy Leipzig. This Austrian advance would lead to a battle at Dresden, in which the Austrians would have no superiority, while the Prussian Army from Görlitz would advance towards the Elbe and cut off their retreat. An Austrian advance against Görlitz would lead to nothing except that the Prussian troops *en route* for that place would be debarked at a point further North. But if the Austrians should advance against Breslau, they would seriously disturb the Prussian arrangements in Silesia, although in the long run the move would be disastrous to the Austrians, for the Prussians from Dresden and Görlitz would cut off their retreat.

Moltke very much dislikes the idea that the Austrians can cause him inconvenience in Silesia. Accordingly on April 12th he tries to find out what is the worst the Austrians can do against Breslau. He concludes that this is really the only direction in which an Austrian offensive could have serious consequences and to meet it resolves to reinforce his Silesian Army by moving I. from Görlitz towards Landeshut, and sending II. not to Görlitz but to Hirschberg.

On April 14th, Moltke writes to the King a letter in which he very clearly explains the conclusions to which he has been brought by the various studies which have been reviewed. After enumerating the points at which he now proposes to assemble the several army corps, he says that in selecting these points he has been guided by two considerations, first of all the desirability of reducing the period of transport to the shortest possible time by making full use of all the through lines of railway; and secondly, the importance of placing as strong a force as possible in Silesia, the region from which the offensive can be taken by the shortest route in the direction most dangerous to the enemy. He lays particular stress on the need for a special effort to have the Guard Corps ready soon, and to bring it quickly up to the front. On the 20th, he again reviews the situation, in a memoir in which his scheme for the concentration of the Army is definitively laid down. The points of assembly are:—

VIII. Zeitz.

VII. Halle.

IV. Herzberg.

G. Spremberg.

- III. Görlitz.
 - I. Greiffenberg.
 - V. Schweidnitz.
- VI. 11 Div. Schweidnitz.
 - 12 Div. Neisse.
- II. Frankenstein.

The first points of concentration for the seven Prussian corps (he thinks it possible that VII. and VIII. may after all not be available), are upon the line from Herzberg to Neisse, which is 187 miles long. These corps will all be up on the 25th day, by which time the Austrians cannot have more than 100,000 men. Accordingly the Austrians cannot prevent the Prussians from concentrating their 200,000 men at some point in Bohemia. He has now altered the centre of gravity of his concentration, for whereas in the winter he proposed to assemble six corps in Lusatia and one in Silesia, he now has five corps in Silesia and two in Lusatia. The reason for this change is partly that an Austrian attack against Silesia is the operation most probably to be expected, and partly because a Prussian attack starting from Silesia must drive the Austrians across the Elbe and away from their communications, while a Prussian attack from Lusatia would push the Austrians back towards Olmütz and Vienna. On April 27th, Moltke reports to the King. The arrangements which this report suggests show only a trifling change from those of the 20th, the points of assembly being changed for VIII. from Zeitz to Halle, for VII. from Halle to Elsterwerda, for II. from Frankenstein to Schweidnitz and for I. from Greiffenberg to Frankenstein. These changes for II. and I. probably arise from a re-arrangement of the details of railway transport.

On the 28th and 29th April, no mobilisation having as yet been ordered, Moltke again reviews the situation. He notes what troops the Austrians now have in Bohemia, and what reinforcements they can bring up during the next 30 days, the result being that by the 25th day, when the Prussian deployment will be complete, the Austrians will have :—

At Dresden, $30,000 + 24,000 = 54,000$, opposed by our VIII., IV., VII., and Guard = 125,000.

At Trautenau 30,000, opposed by our V., II., and 11th Division = 80,000.

At Oswiecim 18,000, opposed by our 12th Division, 12,000.

At Jung-Bunzlau 60,000.

The substance of Moltke's analysis, of which these figures form the basis, is as follows :—

If the Austrians send their first reinforcements to their left wing on the Iser, their right wing at Josephstadt will be so inferior to our Silesian army as to draw upon itself a crushing defeat, and expose all their communications. If they send all their reinforcements to Josephstadt they will be equal to our Silesian army, which will have to remain on the defensive; but their army on the Iser will be exposed to twice its own

numbers, and will have to retreat, though it can evade a battle, which the force at Josephstadt cannot do if our Silesian army attacks it.

The most probable case being that the Austrian reinforcements will go to Josephstadt, it is desirable to strengthen our left wing, and to have it ready as soon as possible. Of this, however, at the start the railway communications will not admit.

If we find at the beginning that the Austrians have not entered Saxony, and have not their principal force beyond the Iser, we must try to reinforce the Silesian army by, at least, part of the III. Corps from Görlitz.

If the Austrians bring up all they possibly can, they will, on the 31st day, have 116,000 men near Josephstadt. We should have against them III., V., II., I., and 11th Division—145,000, or, at least, 130,000 men.

If, then, the Austrians have entered Saxony, or stand beyond the Iser with the Saxons, our Silesian army must take the offensive at once. If the Austrians have only an army of observation on the Iser and their main force at Josephstadt, we must send III. to the Silesian army, which must still take the offensive.

If the Austrians assemble all their forces at once on the Upper Elbe, we may, perhaps, be obliged to give up this decisive operation.

If the Silesian army, having an equal force in front of it, is prevented from debouching from the mountains, our first army must disengage it, which it cannot do before the forty-second day, by which time the Austrians will be 200,000 strong. Even, then, however, allowing for necessary detachments, our armies will have 250,000 men. The most probable situation on the 30th day is:—

Münchengrätz.

Austrians	-	-	-	-	-	-	100,000
Half of VIII., IV., VII., and Guard-	-	-	-	-	-	-	114,000

Josephstadt.

Austrians	-	-	-	-	-	-	100,000
Half of III., V., II., I., and half of VI.	-	-	-	-	-	-	130,000

Upper Silesia.

Austrians	-	-	-	-	-	-	18,000
Prussians, 12th Division	-	-	-	-	-	-	12,000

The decisive battle must come almost at once, and it is impossible to speculate on what will follow that.

About the same time Moltke examines the question, where it will be most useful at the outset to assemble Corps I. and II. If put at Görlitz he will not be able to bring them up in time for a decisive battle at Dresden, though he might move them from Görlitz to Schluckenau, where they would endanger the Austrian retreat from Dresden. Apparently he infers, though he does not expressly say, that I. and II. will be most useful in Silesia.

On the 2nd of May, he is of opinion that if, as he thinks probable, the Austrians have already finished their mobilisation, and are ready to begin their railway transport, they can, by the 25th of May, assemble

162,000 men in Saxony, Northern Bohemia, and at Josephstadt, and can, by the 5th of June, bring up this number to 225,000.

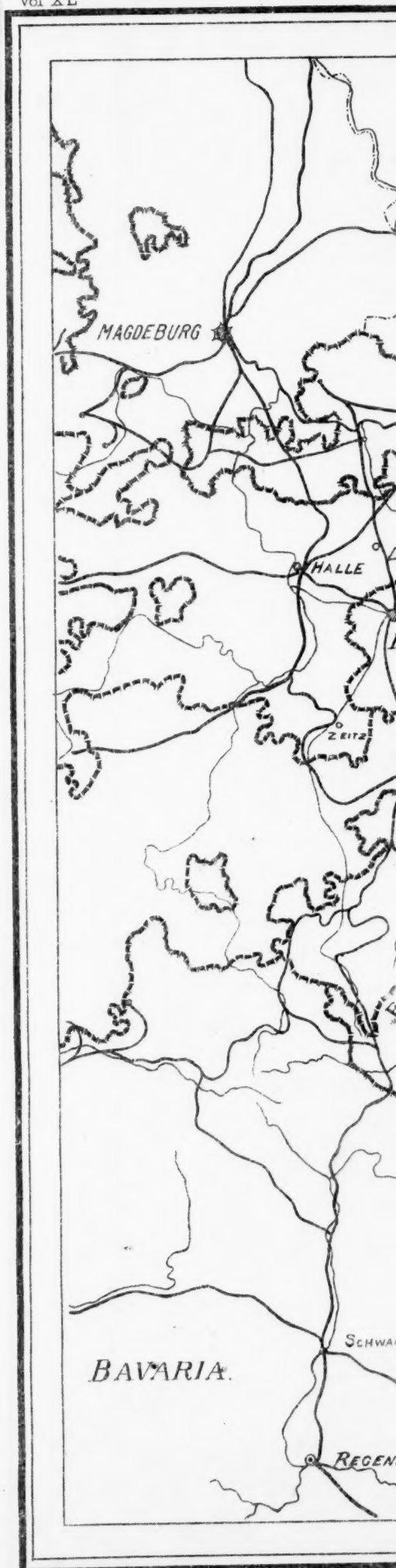
If the Prussian mobilisation is delayed until the 10th of May, the Austrians will be able to begin the campaign with the total just named. In that case, Prussia would have to abandon the advantages of an offensive starting from Silesia because it would be impossible to assemble there a force equal to that of the Austrians. He then examines what, on this new hypothesis, would be the chances of an Austrian offensive towards Berlin, and again concludes that the most advantageous move for the Austrians would be in the direction of Breslau. He sees no means of preventing this if Prussia further postpones arming, and if his general plans are not to be abandoned. Accordingly, he considers it absolutely necessary without further delay to concentrate V. and VI., that is, to mobilise these two corps. He then analyses, on the assumption that this has been done, and that the general mobilisation of the Prussian Army is ordered not later than the 10th of May, the results of an Austrian offensive along each of the possible lines of operation: from their left, from their centre, and from their right. In each case he is satisfied with the numerical conditions under which a battle would be fought.

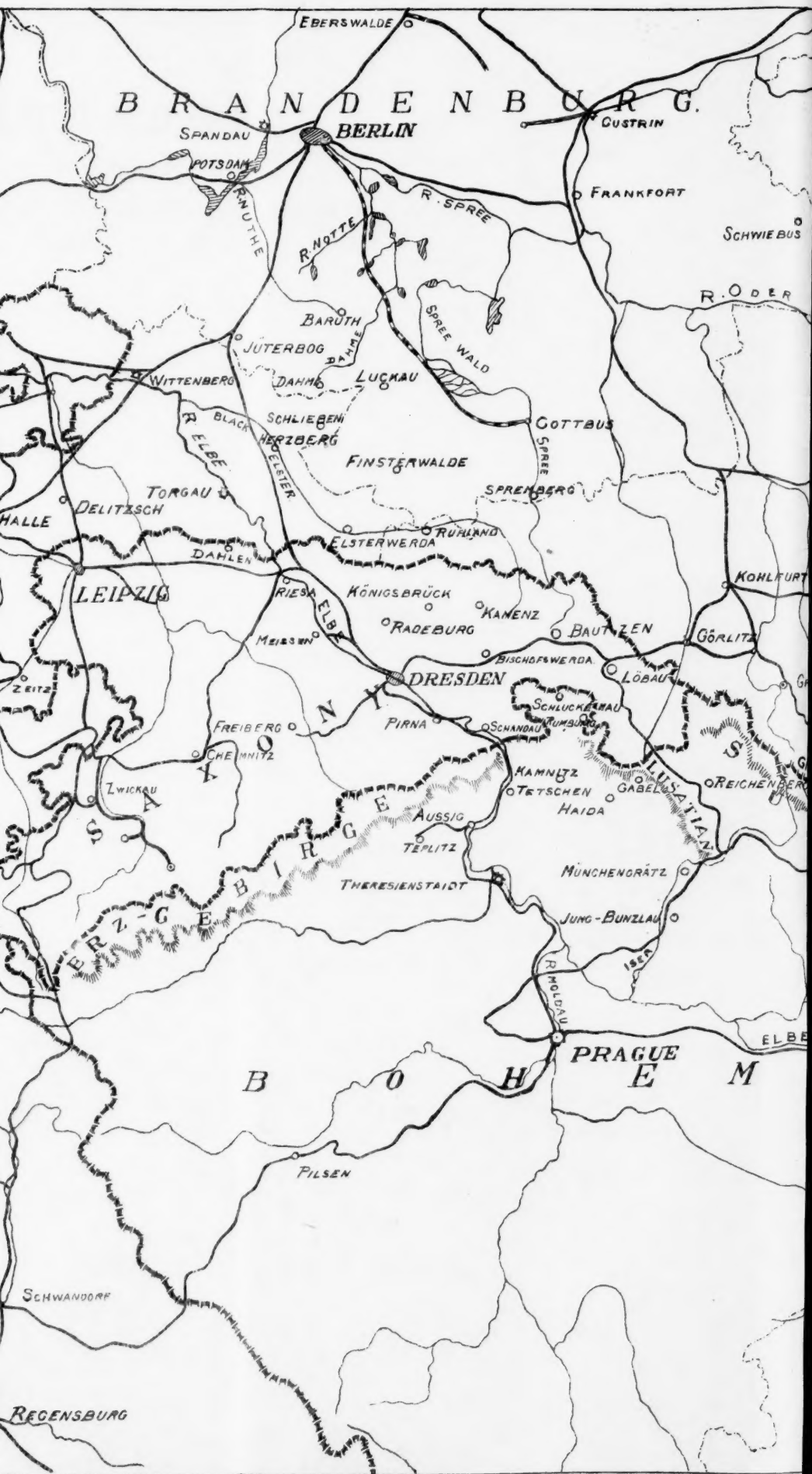
The first part of the correspondence is brought to a close by a couple of letters to the Minister of War and one to Colonel von Stosch, at that time Chief of the Staff of the IV. Army Corps. From the letter to Stosch we learn that almost all the Prussian army corps had by the end of April revised their mobilisation tables and shortened the period which they required to be ready to march, the Guard having effected the process so thoroughly as to have shortened by twenty-two days the period which must elapse before it could move. Moltke was anxious that the IV. Corps should work out for itself a similar simplification of its arrangements. One of the letters to Roon proposes arrangements for the management of the railways during mobilisation and war.

This preliminary correspondence shows the two sides of Moltke's character. Of the military situation his grip is perfect from the beginning, though his mastery is veiled by the fact that his papers reveal the cautious working of his mind. His first care is for defence, and his project to frustrate an Austrian invasion of Prussia will be recognised as a masterpiece. But, whilst thus making himself secure, he never loses sight of his main purpose, which is to break the power of Austria. He sees that by prompt decision and resolute action it will be possible for Prussia during the first three weeks of the campaign to attack the Austrian Army with a force so largely outnumbering it as to give every probability of a complete victory at the very outset. When we remember that the forces on the field of Königgrätz were equal, we can imagine what sort of a defeat would have been given to the Austrians if Moltke's views had been adopted from the beginning. But Moltke was never led by his insight into what was possible to part from his sense of what was practicable. He accepted the position in which he found himself of an adviser. He laid before the King his view of what could be done if a prompt decision

were reached, but in proportion as he saw that the decision would be delayed he modified his plans to meet the changed conditions created by postponement. He carefully draws the line between what is necessary for sure defence and those extra advantages in attack which will be gained by promptitude. While he makes no attempt to insist on the acceptance of his brilliant programme of attack, he resolutely demands, as they become necessary, the adoption of such measures as are, in his opinion, needful for complete defence. A more modest character is not known to history.

The campaign of 1866 is, perhaps, the most brilliant and the most decisive on record. When it was over, Moltke was, with difficulty, persuaded to attend a great dinner in Berlin, and to allow his name to be coupled with the toast of the victorious Army. In his brief reply, he said that, in the name of the Army, he could accept the kind things which had been said only with an important qualification: the Army had not been exposed to the severest trial, that of resistance after defeat; it was therefore impossible to speak without reserve of its good qualities, though they might hope that it would have stood even that supreme test. These were the words of the man who knew while he was speaking that, had his advice been followed, the campaign would have been far more brilliant and far more decisive, and the results even greater than they were. Thirty years have passed, Moltke is in his grave, and now, for the first time, the world learns that Königgrätz was not the victory that Moltke wished, not the decisive blow for which he was prepared, but only a make-shift, only the best that he could do for a Government which had temporised until its best opportunity was past.







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10 20 30 40 50 60 70 80 90 100 ENGLISH MILES.

SKETCH

TO ILLUSTRATE

MOLTKE'S PROJECTS before the
War of 1866.



THE OPERATIONS OF THE BULAWAYO FIELD FORCE IN MARCH AND APRIL, 1896.

By Captain J. S. NICHOLSON, 7th (Queen's Own) Hussars.

The following reports of the earlier fighting round Bulawayo, with the accompanying plans, have been kindly placed at the disposal of the Institution by the Secretary of the British South Africa Company.

GIFFORD'S PATROL TO INSEZA.—ATTACK ON CUMMING'S STORE.

On Tuesday, March 24th, a patrol of 30 mounted men and 14 of the M.M. Police, under Inspector Southey, the whole under command of Captain Gifford, left Bulawayo at 8 p.m., for the purpose of enquiring into the murder of Maddocks, a prospector, and other disturbances in the Inseza district. Nothing unusual occurred, and the Inseza River was reached at 9 the following night; at 9 p.m., Wednesday, 60 miles had been covered. The next morning, Thursday, the march was resumed at daybreak, and Stevenson's Store reached at 8 a.m.; Cumming's Store, $1\frac{1}{2}$ miles further on, at 9 a.m. No natives were seen on the way; a number of refugees were found at the store, which consisted of a brick one-storeyed building with 9-inch walls and thatched roof. A few yards from it was a corrugated iron building, used as a storehouse, with iron roof; a few native huts stood in rear of the house. When Gifford arrived something had been done to make the place defensible—the thatch had been removed from the roof of the building and verandah, loopholes had been cut in the walls of both buildings, bags of earth placed in the doors and windows, and all precautions taken against surprise, under direction of Mr. Liebert, the weakest feature of the position being the high ground which commanded the whole place at short range. The ground is open grass land all round the house for a considerable distance. On Gifford's arrival a scherm of bushes was made between the two houses for the horses, vedettes placed on the high ground in rear, from which an extended view is obtained, and preparations made for the return march next day. At nightfall sentries were placed on all the approaches, and all natives ordered into the iron house. Nothing unusual occurred till at 4.15 a.m. shots were fired by the vedettes on the rising ground, and the sentries came into the house. The moon had set, and it was very dark. Almost immediately fire was opened on the store from three sides, and the natives were seen coming on in large numbers. Gifford then ordered all his men, some of whom were in the verandah,

into the house. Sergeant-Major O'Leary, M.M.P., who had been firing from behind a tree trunk in front of the store, was shot dead, his body being carried in by Inspector Southey. Corporal Strutt was struck by an assegai and wounded in the arm before he could get in. By this time the firing had become very hot, the rebels running right up to the verandah; one was shot with his hands on one of the loopholes, attempting to pull the sandbags away. In about 50 minutes, finding they made no impression and the daylight appearing, the rebels retired back on the high ground. At 6.30 the oxen were collected and inspanned, and the return march commenced. Natives were seen on the high ground at a considerable distance, but did not molest them.

Casualties: Sergeant-Major O'Leary, M.M.P., killed; and six wounded slightly.

Bulawayo was reached at 12 noon Sunday, March 29th, and 33 refugees were brought in.

GIFFORD'S PATROL.—ACTION NEAR FONSECA'S FARM.

At 1.40 a.m., Saturday, April 4th, a strong patrol composed as follows: 100 mounted men, 39 Cape boys, 1 Maxim gun and detachment, 1 wagon, and 1 light wagon, under command of Captain Gifford, left Bulawayo, for the purpose of verifying the report that an impi was massing near Fonseca's Farm, to disperse them and proceed *via* Campbell's Store and Inyati, if possible, back to Bulawayo. Nothing occurred to interrupt the march, till after outspanning and forming laager at 5.30 Sunday morning, two of Mr. G. Grey's Cape boys on their way from his farm to Bulawayo reported that a large impi of Matabele were on Holms' Farm. Gifford determined on moving in that direction towards Shiloh. Accordingly, laager was broken at 1.30 p.m., and at 4.30 p.m. crossed "Capsize Drift," where a large scherm recently deserted was found. At 5.30 a body of Matabele was reported by the advance party moving down the high ground on to his left, and shortly afterwards his rear-guard was attacked. Meantime the main body had moved out into open ground and formed laager. The attack was repulsed by the rear-guard, and the rebels drew off, firing occasional shots at long range. A quiet night was passed on Wessel's Farm, and about 700 yards from Umgusa River. Gifford struck laager at 9.30 a.m.; after marching about a mile his advance guard was attacked, which was repulsed, the rebels being followed up for some distance by the detachment of Colonial boys, who did considerable execution among them. Shortly after, his right being threatened by a large number of Matabele who came down on to the river, the Maxim was brought into action, and the rebels dispersed, the only casualty so far being one horse shot. At 2.30 p.m., the first laager shown on the map was reached, and laager formed, the advanced party sent on to occupy the kopje dominating the road which the columns had to traverse in its advance before reaching the spruit, had been fired on, but no serious opposition was made. Pickets were put out, and a quiet night passed. The next morning, Monday, April 6th, he broke laager after sending out patrols, and shortly after sunrise some

cattle being reported in the direction of the Umgusa, the Colonial boys were sent out to bring them in; they had proceeded a few hundred yards, when fire was opened upon them. The firing becoming brisk, and the rebels being in considerable force, they were forced to retire towards the laager. On this becoming evident, Captain Gifford moved the wagons and the remainder of his force across the dry donga, taking up a position north of the angle formed by the separation of the two nullahs. Captain Dawson and his troop were sent to cover the retirement of the Colonial boys, and, if occasion served, to deliver a counter-attack. This was rendered impossible, owing to the presence of a fresh body of rebels on Dawson's flank, and in his front, who opened fire and continued their advance. Dawson and the Cape boys rejoined Gifford when the attack developed from the rising ground to Gifford's front and right, small parties creeping up and opening on his left about the same time. The Maxim was brought to bear on the front attack with immediate effect, the rebels retiring further up the hill.

Trooper K. S. Mackenzie had been killed during Dawson's retirement, and Corporal E. Reynolds had been wounded when near the Maxim, which was mounted on its tripod on a wagon (he was hit a second time, and died half-an-hour later). On this gun the enemy's fire seemed to be concentrated. Shortly afterwards, Captain Gifford, when on the gun wagon, was hit in the shoulder. Captain Lumsden then assumed command. The firing was kept up till 9 a.m., when it began to slacken, and ceased, with the exception of dropping shots at a long range at 9.30 a.m., when the rebels drew off. Trooper Mackenzie's body was not recovered. Bushes were cut to form the first and second bush fences, and the laager moved into the space formed below the division of the nullah, the inner banks of both dry and wet occupied; the horses were placed in the nullah where they were completely screened from fire. Nothing further was seen of rebels that day and following night, which passed without incident, the total casualties being three killed and five wounded. Messengers had been despatched into Bulawayo with reports and asking for assistance, which was sent under command of Captain McFarlane, his detail being 60 mounted men, 1 Maxim gun, and a heliograph, with a medical man. He left Bulawayo at 9.45 p.m., Monday, April 6th. On Tuesday, April 7th, the attack on Gifford was renewed at 8 a.m. from both flanks, and was continued for two hours with great violence, secondary attacks developing in front and rear. This was repulsed, and the rebels retired. During this attack Captain Lumsden received a severe wound in the ankle. Captain Bisset then took over the command, and two other men were wounded, one severely. A message was despatched to Captain McFarlane, and received by him shortly after 2 p.m. when near the Umgusa River. He was at 3 p.m. met by a party from Gifford, who had been sent out for the purpose. About 4 p.m. Captain McFarlane reached the laager, having met with no opposition on the way. It being too late to return to Bulawayo the same day, he determined to remain the night at Gifford's laager. A party was sent out and recovered the body of Trooper Mackenzie, which was buried in the laager next to that of

Corporal E. Reynolds. No more firing took place, and the march back to Bulawayo was begun on the morning of the 8th, which was reached at 10.30 p.m., Wednesday, April 8th. About 3,850 rounds of Martini-Henry ammunition were expended, and 2,600 rounds of Lee-Metford.

Casualties : — Killed : Corporal E. Reynolds, Trooper K. S. Mackenzie, and two Cape boys.

Wounded : Captain Hon. M. Gifford, shot wound in shoulder ; Captain Lumsden, shot wound in ankle (since deceased) ; Lieutenant Hulbert, shot wound in ankle ; Trooper Fielding, shot wound in ankle, slight ; Trooper Walker, shot wound in seat ; Trooper Eatwell, shot wounds in arm and chest, severe ; Cape boy, shot wound in mouth, slight ; and two men sick with fever. Six horses were lost.

REAR-GUARD ACTION ON THE TULI ROAD, APRIL 10TH, 1896.

On Thursday, April, 2nd, a force consisting of 50 mounted men Bulawayo Field Force, 50 of the Afrikaner Corps mounted under Captain Van Niekerk, 1 Maxim gun and detachment, and Dr. Levy, with ambulance, left Bulawayo at 5 p.m., the whole under command of Captain Brand, to proceed to Manzi-iyama, in Gwanda district. His orders were to bring into Bulawayo the white population of Manzi-iyama if still there. They had been warned to leave eight days previously, but had stated they wished to remain where they were ; matters becoming so critical and their force so small, a relief party was deemed necessary. No opposition was met with on the march down, and the people were found to have retired on Tuli. Captain Brand had been instructed to report on the road, particularly with reference to suitable sites for fortified camps, water supply, etc., with a view to future operations by a detached force.

Manzi-iyama is eight miles distant, the road is practically a defile commanded on either hand from Spargo's store, twelve miles from this town to Manzi-iyama. On the return march opposition was first met with seven miles this side of Spiro's store, the force being fired on from kopjes commanding the advance. The flanking parties became at once engaged, pushing the rebels before them, and occupying flanking positions as they advanced. On reaching the point almost parallel with Latijan's Farm, between the two hills shown on map, the dissel boom of the wagon broke. Firing recommenced and continued till more open ground was reached. The Matabele then appeared in considerable force, and Captain Brand determined to take up a position on the left of the road on a hillock with about 50 feet command. The Maxim was placed on a salient commanding the road to the East, the Afrikaners on the right and the remainder under Lieutenant Pursell on the left. Fair cover was obtained for the horses, the scrub came pretty well up to the position on the South and East faces. A determined attack then developed on three sides of the position, the rebels being in possession of a large number of guns of all sorts, and running up with great determination, some reaching to within 30 yards of the firing line. The Maxim opened early and did good execution, but the thickness of the

bush prevented full use being made of the longer ranges. The attack was successfully repulsed on the South and East faces, largely due to the action of the Maxim, whose fire was then turned on the North attack, which was making considerable headway, but which immediately slackened. Captain Van Niekerk then mounted twenty-five of his men, who made a counter-attack on the thick bush into which the rebels had retired, their right being safeguarded by the fire of the guns. The rebels were pushed through the bush on to open ground, beyond where the Afrikanders inflicted heavy loss on them. By this time the remainder of the force was mounted and proceeded, as shown on map, to avoid the kopje and thick bush commanding the road, which was struck 300 yards further on, the Afrikanders forming the rear guard.

Casualties: Five killed, fifteen wounded, thirty horses lost. The dead had to be left.

ACTION ON THE LOWER UMGUSA RIVER.

A reconnaissance in force having been determined on to ascertain the strength and positions of the rebels on the Lower Umgusa, a force consisting of 110 mounted men, 60 Cape boys under Captains Selous and Cardigan, 100 Friendlies under Captain Taylor, 1 Hotchkiss 1-pounder, and 1 Maxim .303-inch, the whole under command of Captain Bissett, moved out on April 22nd at 6.30 a.m., in a Westerly direction till over the ridge $1\frac{1}{2}$ miles West of Bulawayo. Direction was then changed to the North, when the dissel boom of the Hotchkiss gun broke, allowing the breach of the gun to come violently into contact with the limber box. This delayed the advance three-quarters of an hour, while a tree was cut and fitted. The advance was continued past the West side of Government House, and down the slope towards the Umgusa. Order of march: Grey's scouts covering the front, the Afrikaner troop on left flank. Brand's troop forming the rear guard, and Meikle's troop on the right. On reaching the high ground South of the river, the rebels were seen in small parties along the rising ground the other (N.) side of the Umgusa. Fire was opened by Grey's troop at 500 yards, and the advance continued. The fire was returned. The Afrikanders then pushed on to the rising ground shown on map, and their fire became brisk. They took up a position there commanding the river bed, which is hollow, and held a good number of the rebels, who returned the fire. On reaching the crest line the column took up its position as shown on map, the Cape boys, under Captain Cardigan, being pushed down the slope and across the river, clearing the natives out of the river bed. This advance was very boldly and well made. On reaching the other slope they continued their advance parallel to the river, driving the rebels, who then showed in force, in front of them. Grey's scouts were eventually sent in support along the right bank, as report was made of large numbers of rebels being seen higher up the river. By this time the Cape boys had got considerably ahead, and Grey had to gallop quite 700 yards before they could come into action, which they did very smartly, bringing a flank fire to bear on the rebels retreating before the Cape boys, and a strong attack on the

rebels who were then thick in the nullah, at a range of from 150 to 200 yards. No further support was sent to Grey, and the remainder of the force kept its original position. The Hotchkiss was then found to be unable to open fire, owing to the accident earlier in the day having put the firing gear out of order. Before Grey had been in action three minutes shouts were heard on our right, and a large body of Matabele were seen, not 150 yards off, running down on our right rear through the bush, which is pretty thick just there. If they had come on quietly we should certainly have been cut up. We had to mount and retire, the natives were then quite close, and pistols were being used. Unfortunately, several horses were shot, and several had very narrow escapes, Trooper Crewe being struck in the back by a knobkerry and Trooper Frank Baxter being killed, Captain G. Grey slight bullet wound on the head, his hat being shot through, and Corporal Wise being shot through the shoulder. The Cape boys on the other side of the river were then forced to retire, being almost surrounded. Captain Selous was here almost cut off, his horse being killed. The advance of the rebels was checked by the fire of the Maxim at 900 yards. It being then 12 mid-day, it was decided to return to Bulawayo. Sufficient use does not appear to have been made of the force at command, and if the firing line had been supported by the main body moving parallel with it on the high and open ground, a great success would undoubtedly have resulted. The Friendlies, armed with assegais, were not engaged; this was the first time they had come into action with us, and were not absolutely relied on. The Cape boys fought very well under European leaders, but are very wasteful with ammunition. They are armed mostly with Martini-Henry rifles and carbines; they carried side arms.

Casualties: One killed, four wounded, and two horses killed.

The march into Bulawayo was not interfered with, all proper precautions being taken to safeguard the flanks and rear.

ACTION ON UMGUSA RIVER, APRIL 25th, 1896. COLENBRANDER'S FARM.

The enemy being known to be in strength on the Umgusa River, and it becoming necessary to check an advance on to the South side of the river, a column, consisting of 115 mounted men, 70 Cape boys with fire-arms, 40 with assegais and bayonets, 100 Friendlies under Captain Taylor, armed with assegais and red limber on their shoulders as distinguishing mark, 1 Hotchkiss 1-pounder, 1 Maxim .303 inch, 9 hospital corps with Dr. Vigne and ambulance wagon, the whole under Captain R. Macfarlane, late 9th Lancers, moved out at 7.30 a.m. Saturday, April 25th. The route was down the Salisbury Road $3\frac{1}{2}$ miles, the Afrikanders being echeloned on the left, Dawson's troop on the right, Grey's scouts covering the front. On approaching the farm-house (Colenbrander's), a one-storeyed brick building, Grey's troop advanced to the rising ground immediately to the front, and opened fire on natives seen on the other side of the river. Meanwhile the force took up a position as shown on the map. Grey's firing became pretty brisk, and large numbers of the enemy were seen in and beyond their scherm running down towards the river, with the obvious intention of

outflanking Grey's men through the thick bush on the right, which was what was desired. All in support of the guns were then lying down, and well concealed by the grass, their horses being in rear of the house and down the reverse slope. When the enemy came within 200 yards, Grey retired on the house, taking up position as shown (No. 2). The rebels quickly appeared at the edge of the thicker scrub on the right, advancing at a run, the men with guns continually shooting. When within about 300 yards, the Maxim opened with great effect and the direct advance was checked, but more men appearing on the prolongation of their left Dawson and the Cape boys came into action at short ranges, and did considerable execution, the rebels' fire gradually slackened and they were seen running back by twos and threes down the hill towards the nullah. Unfortunately one of the hospital assistants was here shot through the head, and one of Dawson's men through the body. Simultaneously with the left attack, great numbers were seen advancing rapidly down the opposite slope, and crossing the nullah, re-appeared on the high ground on our left, where the bush is thin. A considerable body was also seen advancing directly on our position, they also crossed the river and advanced up the subsidiary nullah bounding our left front. The Hotchkiss was brought to bear on their right attack, when about parallel with our face, and well massed together; fire was opened at 1,200 yards and very good practice was made. Many were left on the ground, and the remainder very shortly began retiring, using the clumps of bush to gain cover. These of course made an excellent target, and a general retirement took place all along their right, down to the river. Meantime the left front attack was met with a hot rifle fire opening at 800 yards, and in spite of determined efforts the rebels did not succeed in getting within 500 yards, when the Maxim was turned on them and they were driven back to the river, with the exception of a few men with rifles who had crept up to closer ranges before the opening fire; these were shortly disposed of.

Meanwhile their left attack had again advanced and was checked as before, when they made another advance on our left, likewise repulsed by shell fire, and long-range rifle fire. The Afrikanders were then advanced to a knoll on our left front commanding the nullah, Grey's scouts moving out to the rising ground in front. The Cape boys and Friendlies had been sent in pursuit on the right, and the rebels were pushed back to the river where large numbers were taking shelter. On reaching the knoll, the Afrikanders immediately became sharply engaged with their retiring left. Grey's troop bringing a converging [fire] to bear on the crowds in the nullah, and all resistance then ceased. The Afrikanders pushed across the river, numbers running in front of them, who then appeared in the more open ground when they came under the fire of Grey's troop, and the Hotchkiss which made excellent shooting at 1,150 yards; the Afrikanders pushed on to the knoll the North side of the river to our front. Dawson's troop had meantime advanced and completed the rout; very shortly the Afrikanders ceased firing and the action came to a close. The rebels had retired from both flanks, and no more were to be seen. Over

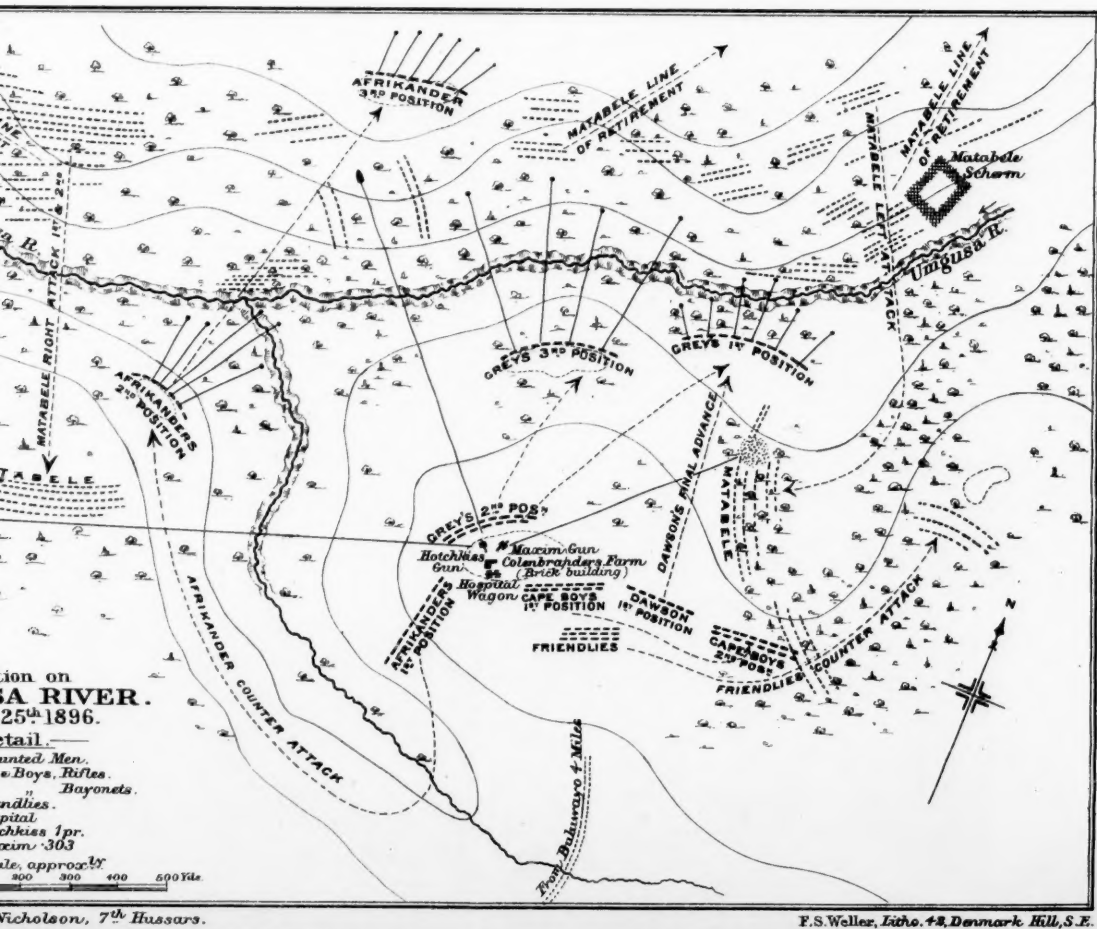
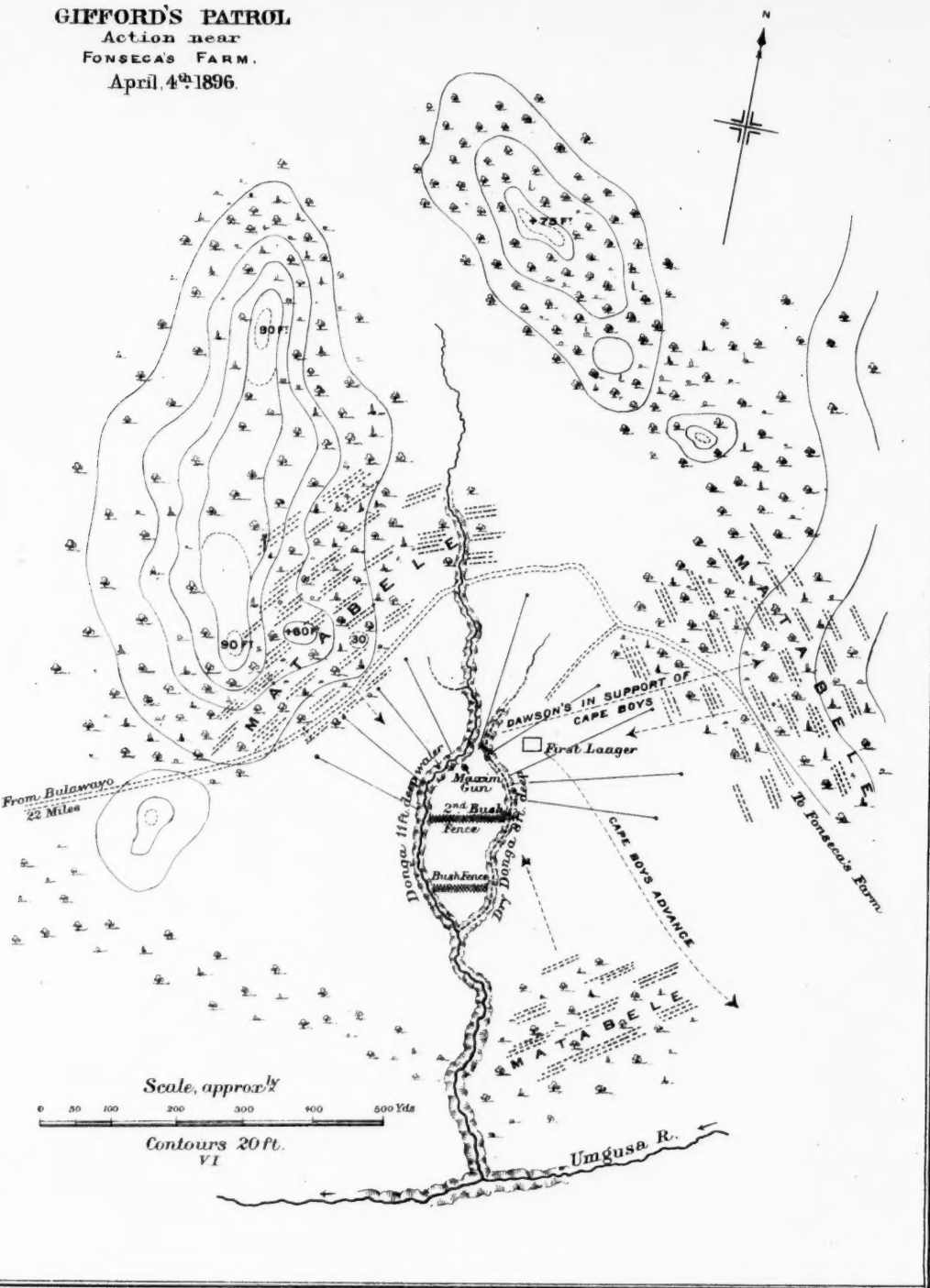
seventy-six bodies were counted in the nullah when the Afrikanders crossed, and the total loss to the rebels must have been very heavy. One hundred and thirty shells were thrown by the Hotchkiss, 4,500 rounds were fired by the Maxim, which ran well, but not so well as the older '45 Martini pattern. The Friendlies were very eager, and killed several, capturing two rifles, they are thus fairly committed to our side. The rebels' shooting was much better in this action, particularly as regards the elevation. It being then 2.15 p.m., a retirement on Bulawayo was ordered, the wounded and dead being conveyed in the ambulance and stretchers. I regret to state the following casualties:—

Killed: Trooper Henry George Whitehouse, Trooper Charles Gordon.

The following wounded:—Trooper Edward Appleyard (since dead), Trooper Roland Venables Lovett (since dead); Trooper Thomas Easton Howell, Trooper Francis Henry Talbot Rice, Troop-Sergeant-Major Johannes Christian Botha, all doing well.

While the action was in progress a patrol placed on the high ground near Government House to watch our left rear was cut off by a large body of rebels, estimated at from 500 to 1,000 men, and one man, trooper Benjamin Parsons, was killed. This body had evidently been held ready to operate against us in the event of a reverse, and to cut us off from Bulawayo. They retired from Government House hill at the conclusion of our action.

GIFFORD'S PATROL
Action near
FONSECA'S FARM.
April, 4th 1896.



NAVAL NOTES.

HOME.—The following are the principal appointments which have been made :
Captains—S. C. Holland to "Tamar" as Commodore of the second-class and in charge of Dockyard at Hong-Kong, vice G. T. H. Boyes. Commander—A. C. Woods to "Acorn."

The following appointments have been made for the manœuvres :—Rear-Admiral—A. K. Wilson, V.C., C.B., for service with Reserve Squadron. Captains—A. S. Pocklington to "Andromache"; A. C. Corry to "Apollo"; F. C. Kirby to "Brilliant"; E. H. Bayley to "Forth"; H. N. Dudding to "Indefatigable"; W. Wilson to "Iphigenia"; F. H. Henderson to "Iris"; C. H. Cross to "Latona"; H. Leah to "Melpomene"; R. D. B. Bruce to "Naiad"; G. M. Henderson to "Pearl"; C. J. Norcock to "Phaeton"; J. L. Burr to "Severn"; R. A. J. Montgomerie to "Sirius"; Count F. C. Metaxa to "Sultan"; H. A. W. Onslow to "Terpsichore"; D. McN. Riddel to "Thetis"; and G. N. Pollard to "Tribune." Commanders—H. L. Tottenham to "Harrier"; E. C. Troubridge to "Hazard"; C. G. May to "Hussar"; J. P. Montgomery to "Curlew"; and R. E. Berkeley to "Landrail."

The ships mobilised for the manœuvres were commissioned on the 8th inst., and attached to the Channel and Reserve Squadrons for the usual exercises during the preliminary cruise; after which the admirals will distribute the ships for the manœuvres, which form the second part of the exercises. The ships assigned to the Channel Squadron assembled at Portland and the Reserve at Plymouth. The torpedo-boat flotilla is to be exercised with Milford Haven as Head-Quarters during the preliminary cruise of the fleets. At the expiration of the preliminary cruise the ships and vessels of the fleets are to proceed to the ports indicated in the secret orders to coal and prepare for the manœuvres.

The general character of the operations to be carried out is the watching of one fleet in port by the cruisers of another fleet lying in readiness at a chosen anchorage, so that no opportunity may be lost of bringing the first fleet to action or of ultimately defeating the object it has in view before the expiration of the five days allowed for the exercise.

No general idea of the manœuvres will be issued beforehand, but the conditions, relative to the fleets, which exist before the actual commencement of the exercise will be made known to each admiral separately, so that the measures they adopt and the dispositions they make will depend upon this knowledge and the subsequent information they may acquire from their own ships and signal stations. The superiority of the two fleets which meet will, if they are complete and intact in battle-ships, be decided by the rules to be issued, but if not intact, it will depend on the superior number of battle-ships present in one fleet. All battle-ships will count alike for this purpose, and cruisers will not affect the issue.

The Channel Fleet will consist of the following ships :—

Battle-ships—"Majestic," "Magnificent," "Royal Sovereign," "Empress of India," "Repulse," "Resolution."

First-class cruiser—"Blenheim."

Second-class Cruisers—"Charybdis," "Hermione," "Naiad," "Sirius," "Apollo," "Thetis," "Tribune," "Forth," "Severn," "Latona," "Andromache."

Third-class cruisers—"Bellona" and "Melpomene."

Torpedo-gunboats—"Speedy," "Harrier," "Hussar," "Spanker," "Halcyon," "Alarm," "Antelope," "Hazard."

Torpedo-boat Destroyers—"Decoy," "Handy," "Lightning," "Salmon," "Sunfish," "Dragon," "Janus," "Boxer," "Bruiser," "Daring," "Hart," "Opossum," "Snapper," "Ferret," "Contest," "Lynx," "Banshee," "Havock," "Hasty," "Porcupine";

Making a total of 48 vessels.

The Reserve Squadron will be composed as follows:—

Battle-ships—"Alexandra," "Sanspareil," "Benbow," "Sultan," "Colossus," "Edinburgh," "Dreadnought," "Devastation," "Thunderer."

First-class cruisers—"Galatea," "Australia."

Second-class cruisers—"Melampus," "Mersey," "Iris," "Phaeton," "Iphigenia," "Terpsichore," "Indefatigable," "Brilliant."

Third-class cruiser—"Pearl."

Torpedo-gunboats—"Leda," "Niger," "Onyx," "Renard," "Circe," "Jason," "Sharpshooter," "Jaseur," "Landrail," "Spider," "Curlew," "Seagull," "Sheldrake"; and 24 torpedo-boats;

Making a total of 57 vessels.

Rear-Admiral Wilson has hoisted his flag on board the first-class battle-ship "Sanspareil," for the manœuvres. A lamentable boiler explosion, resulting in the death of one stoker and the injury of five others, occurred on board the first-class cruiser "Blake," one of the Channel Fleet, on the 24th ult., when the ship was running her natural-draught full-speed trial. As the result of an examination of her boilers generally, it is believed that extensive repairs are necessary, and it is stated that the ship will consequently be paid off, her officers and men being turned over probably to the new second-class cruiser "Talbot." The first-class cruiser "Endymion," with the relieved crews of the "Penguin," "Goldfinch," and "Royalist," from the Australian station, has arrived home, and was paid off at Chatham, on the 27th ult. The second-class cruiser "Sappho," with the relieved crews of the "Sphinx" and "Redbreast," from the East-Indian station, has also arrived, and will be paid off at Chatham. The third-class cruiser "Barham" has arrived at Portsmouth, from the Mediterranean, and was paid off on the 30th ult. Her boilers are to be changed, water-tube ones being substituted for those now in the vessel. The sloop "Swallow" has arrived from the Cape, and will be paid off at Sheerness. The second-class cruiser "Arethusa" has also arrived from the Mediterranean, and will be paid off at Chatham.

On the 27th ult., at Govan on the Clyde, the new second-class cruiser "Isis" was launched from the yard of the London & Glasgow Engineering Company. She is the last to take the water of the six cruisers of the "Talbot" type, which were entrusted for construction to private builders. Her dimensions are as follows:—Length, 350 feet; beam, 54 feet; and with a draught of water of 20 feet 6 inches she has a displacement of 5,600 tons. The stem, sternpost, and shaft brackets are of phosphor bronze, as are also the twin propellers. Internally the hull is subdivided transversely and longitudinally by numerous bulkheads, and the vital portions of the vessel are protected by a continuous steel deck, varying in thickness from 3 inches to 1½ inches. In the vicinity of the engine-room additional safety is provided for the propelling machinery by an armoured citadel, formed of 5-inch Harveyized steel plates. The armoured conning tower, from which the vessel will be manœuvred in action, is built of the same material, 6 inches thick. Externally the hull is sheathed with teak 3 inches thick, and this will be covered with copper after the vessel has been handed over to the Dockyard authorities. For about a third of her entire length amidships teak bilge keels are fitted, and these are cased with brass plates. The propelling machinery, which will be fitted on board by her builders, comprises two sets of triple-expansion engines, in separate compartments, having cylinders of 33 inches, 49 inches, and 74 inches diameter, with a common stroke of 39 inches. Steam is supplied from eight

single-ended boilers of the Navy type, at a pressure of 155 lbs. to the square inch. Each boiler has three corrugated steel furnaces, and appliances are fitted as usual to enable the vessel to steam either with forced or natural draught. Under forced draught the estimated speed is 19·5 knots, the engines developing 9,500-I.H.P. The armament will comprise five 6-inch guns, so arranged that three may fire in direct line ahead and two direct astern in line with the keel, six 4·7-inch guns, besides nine 12-pounders and a number of smaller guns, all being Q.F. In addition the hull is pierced for three torpedo discharge tubes, two submerged and one above water at the stem. The vessel is lighted throughout by electricity. The installation includes three powerful search-lights, and a new multiple flash light for signalling purposes will be fixed at the masthead. Consequent on the improved methods in the manufacture of steel and the experience gained by its extended use for shipbuilding purposes, the Whitehall authorities have now demanded a higher tensile strength from the manufacturers. Until recently it was obligatory that plates should stand a tensile stress of from 26 to 30 tons per square inch of section. All future plates for Admiralty purposes are, however, to successfully stand a stress of from 30 to 35 tons.

The new second-class cruiser "Eclipse," which was built and engined at Portsmouth, has carried out her official steam trials with satisfactory results. The ship is propelled by two sets of three-crank triple-expansion engines, with cylinders of 33 inches, 49 inches, and 74 inches diameter, by 39 inches stroke. Each cylinder is supported by two wing columns of cast steel and one middle line or back standard of cast iron of the usual A design. The main bearing frames, piston, cylinder, and slide covers are of cast steel, and the ordinary double eccentric gear is used for actuating the slide valves, the reversing motion being of the all-round design, which alone is now accepted for ships of the Royal Navy. The steam supply for the engines is obtained from eight boilers of the return multitubular type, each boiler being 14 feet 6 inches in diameter and 9 feet 11½ inches in length. There are twenty-four corrugated furnaces of 3 feet 9 inches diameter, each fitted with bars giving a total grate surface of 630 square feet. With the exception of the two main feed pumps, by Messrs. Weir, of Glasgow, the propelling machinery has been designed and made entirely in Portsmouth Dockyard, and the arrangements generally, having regard to their completeness, accessibility of parts, and simplicity, indicate the ability to steam at full speed as long as her coal capacity will carry the ship without any more risk than is incurred by the Atlantic liners. The normal draught of the ship is a mean of 22 feet 6 inches, but during the trials her draught was only 18 feet 8 inches forward and 22 feet 4 inches aft. The results during the eight hours' run under natural draught were as follows:—Steam in boilers 152·7 lbs., and the vacuum 25·7 inches starboard and 26·5 inches port; the revolutions were 135·7, and the collective I.H.P. 8,220, or 220 above the contract, while there was an air pressure of only ·39 inch. After leaving Portsmouth the ship passed to the eastward of the Isle of Wight, and on reaching Portland turned, pursuing an eastward course till Brighton was neared, and then she turned again for Spithead, where she anchored for the night, having maintained a uniform speed of 19·2 knots. The engines worked with remarkable smoothness, the average temperature in the engine-room being 85°. The coal consumption per I.H.P. per hour was 2·27 lbs. On the four hours' run, under forced draught, the following results were obtained:—Steam in boilers, 155 lbs.; vacuum, 25·7 inches starboard and 26·6 inches port; while the average revolutions were 141·17 starboard and 142·36 port per minute. The starboard engines gave a mean H.P. of 4,820 and the port engines of 5,033, or a collective power of 9,853, being 253 above the stipulated power. The speed as registered by patent log was 20·1 knots with only ·94 inch of air pressure. The engine-room and stokehold were so cool during the trial that the two exhaust fans were not required. The trial was regarded as perfectly satisfactory. The vessel also went through her circle trials, answering her helm

admirably. During the thirty hours' run, which followed, her mean draught was 18 feet 2 inches forward and 22 feet 2 inches aft, and she had 135·6 lbs. of steam in her boilers, with a vacuum of 26·5 inches on both sides. With 115·7 revolutions star-board and 116·3 port her engines showed 2,418 and 2,420-H.P. respectively, or a collective H.P. of 4,838. There was no air pressure, and with a consumption of 1·83 lb. of coal per I.H.P. per hour she gave a mean speed of 16·8 knots. In view of the fact that the ship at all her trials was drawing much less than her normal sea-draught, it cannot be said that the speed obtained was as high as it ought to have been.

The new torpedo-boat destroyer "Hardy," built by Messrs. Doxford and Sons, of Sunderland, has also completed her official full-power trials on the measured mile off the Maplin Sands. The speed stipulated for by the Admiralty is 26 knots, and the "Hardy" easily achieved a mean rate of 26·8 knots for six runs over the measured mile, and a mean speed of 26·514 knots for three hours' continuous steaming. The mean steam pressure in the boilers was 189 lbs. per square inch, and the mean revolutions were 360 per minute. The average I.H.P. developed by the engines during the trial was 4,184.

The new first-class cruiser "Terrible" has arrived at Portsmouth, and been placed in the new dock, No. 14, to be completed for sea. During her trials on the Clyde the "Terrible" with 100 revolutions attained a speed of 20½ knots, and with 105 revolutions 21½ knots. At 4.30 on the morning of the 23rd ult., she left Helensburgh for Portsmouth, using only 24 out of her 48 boilers, and two hours after starting, with 70 revolutions, she attained a speed of 15 knots, which she maintained till she arrived at Spithead late on the evening of the 24th. She had fine weather, with smooth sea, but an adverse tide for the greater part of the distance, but no difficulty was experienced in keeping a uniform speed, and the Belleville boilers worked very satisfactorily. With all her stores on board the "Terrible" will have an even keel, drawing 27 feet both fore and aft, but having no stores on board, and having shipped only 500 tons of coal, though her capacity is 3,000 tons, she drew only 20 feet 4 inches forward and 26 feet 4 inches aft when she started, thus giving her an appearance of standing too high out of the water forward. The machinery and boilers gave no trouble of any kind, and the speed would have been better but for the fact that she is at present only wood sheathed and has been in the water for thirteen months, having been launched in May, 1895. Her guns are not yet on board, and her barbettes cannot be completed until the guns are mounted, but the casemates are in position and ready for the auxiliary armament. On the trip to Portsmouth her steering gear answered admirably. The vessel is in a forward condition, and could be prepared for sea in two months, as she has only to be copper sheathed and have her submerged torpedo-tubes fitted.

The construction of the new docks at Portsmouth—the largest in any of the Government yards—has progressed so rapidly that No. 14 was completed on the 25th of last month, and No. 15 will be finished some five or six months hence. Commencing in August, 1893, the contractors—Messrs. Price, of Westminster—undertook to complete both docks in five years, but in one case they will anticipate their undertaking by over two years and in the other by about twenty months. For massive strength there are probably no such docks in the world. The foundation of the floor consists of 3 feet of Portland cement, above which lies 7 feet of brick-work, and above that again 4 feet of granite, while the sides vary in thickness to suit the formation of the work, the concrete ranging from 4 feet at the top to about 10 feet at the springing of the sides, the inner lining of brick varying in less degree, and the granite facing still less. Altogether 15,000,000 bricks and 63,000 cubic feet of granite, measuring 13 feet to the ton, have been used in the construction of the docks. During the progress of the works the stones have been cut and dressed in the quarries at Penryn, Cornwall, being delivered ready to be placed *in situ*.

The following are the principal dimensions :—Extreme length of coping, 563 feet 6 inches ; length on floors, 550 feet ; extreme width at copings, 120 feet ; width on floors, 75 feet ; depth, 43 feet 6 inches ; depth of water over sills, 33 feet 10 inches. The two docks differ only in width of entrance, No. 14, which retains the masonry that was built when the dock was designed in 1888, having an opening of 82 feet, while No. 15, which had the original entrance widened under the present contract, has an opening of 94 feet. Both docks can be lengthened 15 feet by placing the caisson in the present stop instead of the one that has been newly cut, and will each be capable of holding more than 12,000,000 gallons of water. The most serious engineering difficulty occurred in widening the entrance to No. 15, the object of altering it from 82 feet to 94 feet being, not so much to provide for the possibility of a ship having such an enormous beam, but in order that a battle-ship, damaged in action and lying low in the water, might pass into the dock safely, and the masonry at the base is square cut to provide for this contingency.

As the docks, which are side by side, open into the repairing basin, the widening of the entrance necessitated the construction of a coffer-dam 107 feet wide, and as the piles were sunk it was found that some were driven upon boulders and others into the sand. There being a pressure of 3,000 tons of water on the dam it was not long before the water rushed through, carrying the sand with it. The dam had, therefore, to be so constructed as to resist the leak, and two rows of sheet piling, 5 feet apart, were driven into the basin, but from time to time the obstruction had to be further strengthened and the foundations protected by clay. But, as the sand and water continued to flow through, sacks were placed inside the clay, and as the water was thus filtered the sacks retained the sand ; thus the leak was ultimately utilised to cure itself. When this difficulty had been overcome, the "dumping" that had been allowed to remain between the dock entrance and the excavation was removed and the work proceeded steadily, being further facilitated by the absence of frost during the past winter. The protracted frost of the previous winter, however, gave rise to serious anxiety at No. 14, as it produced several landslips on the East side, within a few feet of the electric shop. The difficulty was increased by the severity of the weather, the loose character of the soil, and the steepness of the cutting, but when the frost ceased the difficulty vanished.

Each dock contains a sump for the collection of leakages, which are drawn into the subways beneath the foundation, connecting the docks with the general pumping system of the yard, and the culverts through which water pours into the docks are of such a height that a man of ordinary stature can walk through them without stooping. The coping of No. 14 is practically finished and six 7-ton compressed-air capstans, which are now being placed in position round No. 14, will be supplied with motive power from the air compressors in the main pumping station, while the stanchions round the top and the blocks on the floor of the dock are in an advanced state. Each dock entrance is to be provided with a steel caisson with a greenheart keel bearing a granite face, in order to make a water-tight door when the dock is empty.—*The Times*, and *Naval and Military Record*.

BRAZIL.—There are under construction for the Government at present the following ships :—In France, two small battle-ships ; in England, three protected cruisers ; in Germany, three torpedo-cruisers ; and in the dockyard at Rio, two monitors for river service. It is further contemplated to add three more cruisers, the orders for which are expected to be placed in Italy.

The three torpedo-cruisers are being built in the Germania Yard at Kiel, and the first of them, the "Caramuru," was launched in April last. Their dimensions are as follows :—Length, 260 feet ; beam, 31 feet ; and with a mean draught of 10 feet 3 inches the displacement will be 1,030 tons. The engines are to develop 6,000 I.H.P., giving a speed of 23 knots. The armament will consist of two 105-millimetre (4-inch) guns, six 57-millimetre (2½-inch), and four 37-millimetre (1½-inch)

guns, all Q. F., with three torpedo-discharges, one in the stem, and one on each beam. A small twin-screw gun-boat is also being constructed by Messrs. Yarrow.—*Rivista Marittima*.

CHILI.—The Chilian Government has ordered from the firm of Ansaldo and Co., of Sestri Ponente, Leghorn, an armoured cruiser similar in type to the "Garibaldi," which, built originally for the Italian Government, has lately been sold to the Argentine Government. There is considerable jubilation felt in Italy at the increasing number of war-vessels, which are being constructed for foreign Governments in Italian yards. The "Guardia Marina Riquelme," fourth and last of the 30-knot torpedo-boat destroyers, building by Messrs. Laird for the Government, was launched at Birkenhead on the 20th ult.—*L'Osservatore Navale*.

DENMARK.—The new armoured coast-defence ship "Skjold" was launched on the 9th May, from the Royal Dockyard at Copenhagen. The ship is of a new type, for while of the six older coast-defence vessels five are only single-turreted, and one double-turreted, the "Skjold" is to have four turrets. In the foremost of these turrets protected by 8-inch steel armour will be mounted a 24-centimetre (9·45-inch), in the other three turrets protected by 4·8-inch armour will be mounted three 12-centimetre (4·7-inch) Q. F. guns, and in addition there will be five smaller Q. F. guns. The dimensions of the ship are as follows:—Length, 226 feet 6 inches; beam, 38 feet; and with a mean draught of 13 feet, she has a displacement of 2,150 tons. The engines are to develop 2,200-I.H.P., giving a speed of 13 knots. There is a complete water-line armour belt of 9-inch steel, and an armour deck of 2·5-inch steel in thickness.—*Neue Preussische Kreuz Zeitung*.

FRANCE.—The following are the principal promotions and appointments which have been made: Rear-Admiral—C. Sallandrouze de Lamornaix to be Vice-Admiral. Capitaines de Vaisseau—A. P. Blanc, M. F. de Bausset-Roquefort-Duchaine d'Arbaud to be Rear-Admirals. Capitaines de Frégate—N. Kiesal, A. Boué de Lapeyrière, E. L. Delaunay, D. A. Courmes, L. E. Lieutard, E. J. M. Boisse to be Capitaines de Vaisseau. Vice-Admiral—C. Sallandrouze de Lamornaix to be Chief of the General Staff of the Navy and Director of the Military Cabinet. Rear-Admirals—E. C. Chauvin to be President of the Permanent Commission of Control; E. de Maigret to be Member of the Council of Works of the Navy; C. L. T. Courrejolles for service at the Ministry of Marine. Capitaines de Vaisseau—F. E. A. Roberjot to "Triomphante" and command of the Cochon China Naval Division; N. Kiesal to command of Submarine Defences at Brest. Capitaine de Frégate—G. A. Festy to command of Submarine Defences at Rochefort.—*Le Moniteur de la Flotte*.

A boiler explosion attended, unfortunately, by a serious loss of life, occurred on board the new first-class battle-ship "Jauréguiberry," on the morning of the 10th ult., during a twenty-four hours' run under natural draught to test the coal consumption. The ship left Toulon at 9 a.m. on June 9th, and everything went well until at 5.30 the following morning, when the rupture of a tube in one of the boilers caused a rush of water and scalding steam into the stokehold, by which eleven men were badly scalded, six of whom have since succumbed to their injuries. As the repairs to the damaged boiler will occupy some little time, in consequence of several of the other tubes being injured as well as the boiler itself, it is reported that the ship will be paid off until ready to renew her trials. The new first-class battle-ship "Charles Martel" has been continuing her preliminary trials at Brest satisfactorily; under natural draught, with the engines developing 11,000-I.H.P., a speed of 17 knots was obtained. The new first-class battle-ship "Carnot" has completed her preliminary trials at Toulon; with the engines developing 8,000-I.H.P., and making 98 revolutions, a speed of 16 knots was maintained, and under forced

draught, with the engines developing 15,000-I.H.P., and making 102 revolutions, the speed obtained was 17·4 knots. There has been a miscalculation as to the draught of this ship, and it is now stated that by the time she is completely fitted for sea with all her stores and coal on board, the top of her armour belt will be almost level with the water instead of being 2 feet 6 inches above, as was intended by her designers. The first-class cruiser "Tage," which has been undergoing repairs, has made a mean speed of 18 knots under forced-draught, and maintained an average speed of 17 knots during a twenty-four hours' run; the "Tage" was launched in 1886. The new second-class cruiser "Descartes" has been continuing her trials, but in consequence of some of the tubes of her boilers leaking, her twenty-four hours' run at full speed under natural draught had to be interrupted; for some hours, however, with the engines making 120 revolutions, she maintained a speed of 18 knots.

It has been discovered that the boilers of the third-class cruiser "Éclaireur," which was under orders to relieve the "Roland," a similar ship in the North-Atlantic Division, are so defective that new ones will have to be supplied; under these circumstances the ship will not be commissioned, and a sister-ship, the "Amiral Rigault-de-Genouilly," has been selected in her place. It has not yet been settled what is to be done with the "Foudre," built to rival the English "Vulcan," as a torpedo dépôt-ship; at her trials it was discovered that she could neither carry the five second-class torpedo-boats it was intended to put on board her, nor hoist them in and out; it was then proposed that she should be converted into a cruiser, as she has a speed of 20 knots, but this idea seems now to have been given up by the authorities, and it is believed that she will still be used as a dépôt and repairing ship for the squadron, while her speed will warrant her being employed as a scouting vessel, should the necessity arrive. The new torpilleur-de-haute-mer "Forban," which made 31 knots on her trial trip, has been commissioned, and has left Cherbourg for the Mediterranean, where she will be attached to the Active Squadron of the Mediterranean Fleet. The new torpedo-avisos "Casabianca" and the torpilleur-de-haute-mer "Tourmente" joined the Active Squadron of the Mediterranean Fleet on the 15th ult., and will relieve the "Léger" and "Argonaute" respectively; the "Léger" joins the Reserve Squadron, where she relieves the "Bombe," which is to be paid off and placed in the second category of the Reserve at Toulon, along with the "Argonaute." The torpilleur-de-haute-mer "Tourbillon" having been relieved in the Squadron of the North by the "Lancier," a vessel of similar type, has been placed in the second category of the Reserve at Brest. The new first-class armoured cruiser "Pothuau" is to be commissioned for her trials at Cherbourg with a complement on the footing of *effectif d'essais*. The torpedo-boats "155," "156," and "157" have been transferred from Rochefort to strengthen the "Défense Mobile" at Toulon, and "186" has been transferred from Cherbourg to Bizerta. Orders have been received at Cherbourg to make the necessary preparations for laying down the new coast-defence battle-ship "Henri IV." On 13th May, an explosion occurred on board the "Amiral Duperré," flag-ship of the French Mediterranean Reserve Squadron. It was discovered that a cartridge for the 13·3-inch gun had exploded in the passage leading to one of the magazines, which at the time contained nearly five tons of powder, so it is evident that the escape from a terrible disaster must have been very narrow. It is stated that the explosion was caused by the spontaneous decomposition of the powder in the cartridge due to the excessive temperature in the passage, which was more than 104° Fahr., a heat sufficient to cause the powder to decompose and give off inflammable gases. In consequence of this accident, a careful examination of the magazines of the "Hoche," the new flag-ship of the Squadron of the North, has been made, and the temperature of those for the 27-centimetre and 14-centimetre guns, which are in the centre of the ship, being found very high, at the request of the admiral the ammunition has been removed and temporarily placed in the magazines on shore.

On June 11th the first-class cruiser "D'Entrecasteaux" was launched from the yard of the Société de la Méditerranée at La Seyne, near Toulon. She is the largest unarmoured vessel yet launched for the French Navy, although the new so-called Commerce-Destroyers lately commenced will be somewhat larger again. Her dimensions are as follows:—Length, 393 feet 8 inches; beam, 58 feet 6 inches; mean draught, 25 feet 6 inches, with a displacement of 8,114 tons. Her armament will consist of two 24-centimetre (9·4-inch) guns, one forward and one aft, twelve 14-centimetre (5·5-inch) Q.F. guns, twelve 3-pounder and 1-pounder Q.F. guns, with six torpedo-discharges, two of which will be below water. Her two 24-centimetre guns will be in turrets protected with 2·7-inch plating, and there will be two armoured decks, the upper having a maximum thickness of 4 inches and the lower of 1 inch. Cylindrical double-ended boilers and two vertical triple-expansion engines developing 13,500-H.P. are to give a speed of 19 knots, and, with the normal coal supply of 650 tons, the radius of action will be 5,500 miles at 10 knots and 900 miles at full speed. The cruiser will have a complement of twenty-one officers and 500 men. She is built of steel and sheathed for foreign service, and her cost is stated to be £667,740. The designs are by M. Lagane, who prepared the plans for the "Jauréguiberry." The vessel was laid down in 1894, and is to be delivered, by the contract, at the close of 1897.

The experiments with Melinite shells, which have been carried on against the obsolete iron-clad "La Galissonnière," have concluded, and the ship has been towed back to Toulon. The result of the experiments have not been divulged, but it is stated that six shells charged with 39·6 lbs. of Melinite were fired from a 7·4-inch gun, that they penetrated 2·9 inches of Harveyized steel and burst on board, doing an enormous amount of damage. Up to the present, nobody but a few officials and the members of the committee have been allowed to examine the damage done to the ship.

The Naval Manœuvres began on the 9th inst. Vice-Admiral Gervais is in supreme command in the Mediterranean, and has under his orders in addition to the ships of the Active Squadron, both the Reserve Squadron, and the Training Squadron, forming the superior school of the Navy, with the Défenses Mobiles of Corsica and the 5th Arrondissement Maritime (Toulon).

The first part of the manœuvres will consist as usual of tactical exercises, and an attack will be made upon the Hyères Islands. The theatre for the second part of the manœuvres will be the coast of Algeria, in particular the section lying between Algiers and Philippeville. The Reservists called out for training this year joined the dépôts on the 5th inst., and the Reserve Squadron of the Mediterranean and ships of the Squadron of the North completed to their full sea-going complements on the 1st July.—*Le Temps*, *Le Yacht*, and *Le Moniteur de la Flotte*.

ITALY.—The following are the principal promotions and appointments which have been made: Rear-Admirals—Giuseppe Palumbo, C. A. Puliga Quigini, to be Vice-Admirals. Captains—C. Grillo, F. Grenet, to be Rear-Admirals. Vice-Admirals—C. Morin to Command of Reserve Squadron; G. Palumbo for service at Ministry of Marine; C. A. P. Quigini to be Commandant of Maddalena.—*Gazzetta Ufficiale*.

The Superior Council of the Navy is again to be composed exclusively of naval officers of Admiral's rank, as follows, viz.:—One Vice-Admiral president, two Vice-Admirals and two Rear-Admirals as members. The opinion is expressed that this council, to be of any real use, should be something more than a mere "consultative" body, and naval opinion seems to favour a governing body for the Navy composed like the English Admiralty.

According to present arrangements, this year's naval manœuvres will be held in the Thyrrenian Sea between the 15th July and the 15th August. Both the Active and Reserve Squadrons will take part, each being reinforced for the

purpose, and Admiral H.R.H. the Duke of Genoa is, it is stated, to have the chief command, and will hoist his flag in the Royal yacht "Savoia." The theme of operations is that a hostile squadron, composed of four battle-ships, two cruisers, and three small flotillas of torpedo-boats, starting from two different points, having effected a junction, is to attack the coast towns and cut the communications with the interior. The defending squadron, composed of four battle-ships, six cruisers, and two torpedo-boat flotillas, is, if possible, to prevent the junction of the enemy's forces and frustrate every attempt at bombardment or landing.

Three new first-class battle-ships of the "Re Umberto" type, but with somewhat less weight of armour and a larger secondary battery of Q.F. guns, are shortly to be commenced—one at Spezia, one at Castellamare, and the third at the Ansaldo Yard at Sampierdarena, Leghorn. The ships under natural draught are to have a speed of 20 knots, and of 22 knots under forced draught. The engines and boilers are to be manufactured by the firms of Ansaldo, Odero, and Guppy, respectively.

The Minister of Marine has ordered from the Odero firm at Sestri Ponente a new torpilleur-de-haute-mer of a special type. She is to be 132 feet in length, 18 feet beam, and with a draught of 3 feet 4 inches will have a displacement of 135 tons; the engines are to develop 2,500-I.H.P., and to give a speed of 25 knots.

The new armoured cruiser "Marco Polo" has lately completed her final acceptance trials at Naples, and will shortly reinforce one of the active service squadrons.

She was built in the Royal Dockyard at Castellamare di Stabia, and engined by G. Ansaldo and Co., of Sampierdarena. Her dimensions are as follows:—Length between perpendiculars, 327 feet; beam, 48 feet; and with a draught of just over 19 feet, she has a displacement of 4,600 tons. The engines were required to develop 6,000-I.H.P. with natural, and 10,000-I.H.P. with forced draught. There are two independent sets of engines and shafting in separate compartments, and two separate boiler rooms, one before and one abaft the engine rooms, each containing two cylindrical double-fronted boilers. The weight of the propelling machinery complete with all accessories, water in the boilers and condensers, etc., is about 800 tons. Forced draught is obtained by ventilators on the closed stokehold system. Each engine has four cylinders, one high pressure, one low pressure, and two other also low pressure, of 37 inches, 57 inches, and 62 inches diameter respectively, and a stroke of 30 inches. The high-pressure cylinders only are fitted with cylindrical slide valves; the supporting columns rest upon girders forming part of the structure of the ship. The propellers are four-bladed, of manganese bronze, 14 feet diameter, with a mean pitch of about 15 feet. The condensers have a cooling surface of 1,100 square metres each, the auxiliary condensers 70 square metres. A small independent engine is provided for working the circulating and air pumps, the latter, two in number, are single-acting; the circulating pumps are capable of drawing from the bilge and discharging overboard 700 tons of water per hour.

The ship is protected by an armour belt of 4-inch steel, from the upper deck to about 3 feet 3 inches below the water line for about two-thirds of her length, connected at the ends by armoured athwartship bulkheads of the same thickness of steel. There is also a 2½-inch armoured deck extending the whole length of the ship. She is provided with a double bottom, cellular construction between the protective and lower decks, and longitudinal cofferdams fitted with cellulose.

The armament consists of six 152-millimetre (6-inch) Q.F. guns, ten of 4·7-inch Q.F. guns, together with a large number of Q.F. guns of smaller calibre. There are also five torpedo discharges, one bow submerged, and four above water broadside. The official trials for coal consumption of 10 hours' duration, as required by the contract, were carried out at Naples in December, 1895. With all four boilers alight and with steam pressure varying between 135 and

150 lbs., the revolutions were 125 to 126, and the I.H.P. 7,150, with a coal consumption of 1·87 lbs. per I.H.P. per hour. The mean speed for the whole duration of the trial was about 17 knots.

In the subsequent forced-draught trial of three hours in the month of January last, the power developed was about 10,700 I.H.P., with 140 revolutions, and a coal consumption per I.H.P. of 2·1 lbs. The air pressure by the water barometer for the forced draught was from 2 to 2½ inches. The speed on this trial was 19 knots, but it would certainly have been much higher if the ship had been docked and her bottom cleaned, as she had been lying in the basin for some months.—*Rivista Marittima* and *L'Osservatore Navale*.

RUSSIA.—The first-class battle-ship "Georgi Pobedonosets," the latest addition to the Black Sea Fleet, has recently satisfactorily completed her steam and gun trials at Sevastopol. She is a first-class battle-ship of 10,280 tons displacement, 320 feet in length, 69 feet beam, and mean draught of 26 feet 7 inches. Speed 16½ knots. The bunkers are capable of carrying 700 tons of coal.

The armament consists of six 12-inch 56-ton B.L. guns of the Russian Krupp pattern, carried in three barbettes, two barbettes being placed abreast somewhat before the beam, each barbette carrying two guns, the remaining two guns being situated in a barbette upon the after deck. There are also seven 6-inch 6-ton B.L. guns, eight 10-centimetre Q.F., and six machine guns. The vital portions of the vessel are protected by a belt of 16-inch, and the barbettes by 12-inch, compound armour plates.

The propelling machinery is of the vertical-inverted triple-expansion type, having cylinders 45 inches, 66 inches, and 100 inches diameter, and common stroke of 4 feet, driving twin screws of 16 feet 6 inches diameter. Working steam pressure 150 lbs. per square inch. Steam is supplied by 16 boilers arranged in four separate compartments. They are of the cylindrical single-ended type, having three furnaces each, the total grate area being 980 square feet, and total heating surface 29,100 square feet. Air is supplied by means of twelve double-breasted fans each of 5 feet diameter.

On May 21st, at 8.30 a.m., the vessel left Sevastopol harbour for official steam trial, the stipulated power being 10,600-H.P., to be maintained for six consecutive hours with assisted draught, ¼-inch air-pressure in the stokeholds being the maximum allowed. Admiral Ostalatsky was president of the commission appointed to witness the trial. The vessel was commanded by Captain N. P. Kusmitch, General Heimbrück representing the Imperial Technical Committee of St. Petersburg. The trial commenced at 9.30 a.m., and was carried out under the direction of Mr. John Sampson, of Messrs. Maudsley, Sons and Field, of London, the constructors of the machinery. The results were as follows:—

—		Steam.	Vac.	Revs.	I.H.P.	Total I.H.P.
			In.			
1st hour	f Starboard ...	135	28	89	6478·81	12714·08
	f Port ...	135	28	88	6235·27	
2nd hour	f S. ...	138	28½	89	6379·27	12680·61
	f P. ...	135	28½	87½	6301·34	
3rd hour	f S. ...	150	28½	92	7057·39	13890·49
	f P. ...	150	28½	90	6833·10	
4th hour	f S. ...	140	28½	90	6811·55	13630·51
	f P. ...	140	28½	90	6818·96	
5th hour	f S. ...	145	28½	92	6821·25	13991·08
	f P. ...	145	28	91	7169·83	
6th hour	f S. ...	140	28½	91	6782·56	13900·41
	f P. ...	140	28	91	7117·84	
Total mean I.H.P.		13,468

The mean air-pressure in the stokehold was 25 inch. The coal was unpicked Nixon's Navigation, having 20 per cent. small. The result is considered highly satisfactory, the above-mentioned H.P. (nearly 3,000 in excess of the contract) being maintained with ease by the ordinary ship's crew of Russian stokers and artificers, led by a small staff of Englishmen. The ship returned to harbour in the evening. Upon the following day the vessel again put out to sea for artillery trials, the results of which were highly satisfactory, both guns and mountings being thoroughly tested during a trial which lasted nearly 12 hours.

The "Georgi Pobedonosets" will now join her sister-vessels "Sinope," "Catherine II.," "Tchesma," and "Dvenadsat Apostoloff," forming together a fleet of five first-class battle-ships complete and equipped ready for service. The last ironclad launched in the Black Sea—viz., "Tri Sviatitelya," awaits steam trials, which, however, will probably not take place during the current year.—*The Times*.

MILITARY NOTES.

PRINCIPAL PROMOTIONS AND APPOINTMENTS DURING JUNE.

Lieut.-General J. Davis, C.B., to be General; Major-General C. J. East, C.B., to be Lieut.-General; Colonel J. Browne, h.p., to be Major-General; Colonel W. O. Barnard, to be Major-General; Colonel (Major-General in India) W. P. Tomkins, C.I.E., to be Major-General; Lieut.-General G. D. Barker, C.B., to command the troops in Bermuda; Colonel R. B. Cotton, to command the 13th Regimental District.

HOME.—A special Army Order of 20th June, 1896, promulgated the Royal Warrant and Regulations, dated 16th June, re-arranging and re-organising the ordnance services of the Army. A general department for army ordnance services is created with the designation of the "Army Ordnance Department"; and the Ordnance Store Corps, including the Armourer Section, becomes the "Army Ordnance Corps," with the addition of a machinery artificer section.

The Queen has approved of a special star, cast in gun-metal, being granted to the Imperial and Colonial forces employed under Major-General Sir Francis C. Scott, K.C.B., in the operations connected with the Ashanti Expedition, between December 7th, 1895, and January 17th, 1896, both dates inclusive.

The Annual Report of the Musketry Instruction carried on in the Army in 1895 is one of the most valuable which have as yet been issued, inasmuch as the failings are, for about the first time on record, fearlessly and plainly pointed out.

The returns showing the result of the shooting appear to have been rendered with far greater accuracy than heretofore, and general officers commanding reported that the practice registers were kept with due regularity and care. Cordite was universally used and caused great satisfaction. It is not considered that the range-finding of the infantry is in a satisfactory condition, the mistakes made in taking the ranges for long-range volleys, etc., showing that in many cases the knowledge of how to use the instrument is very rudimentary. The general issue of the mekometer is not yet completed, nearly fifty units still having the Weldon.

General officers commanding expressed themselves as being satisfied with the shooting of the cavalry. But, considering the excellence of the Lee-Metford carbine, the percentages at the final classification do not point to very superior shooting. Of marksmen and first-class shots there are, roughly speaking, 29 per cent., while of second and third-class shots, which are equivalent to "moderate" and "bad," there are 70 per cent.

In regard to the infantry, the shooting at the depôts may be considered good,

for 46 per cent. were classified as marksmen or first-class shots, and only 8 per cent. figured in the third class. But that of the infantry battalions is not so satisfactory. They are improving in their shooting, more attention is paid to the subject than formerly, and the course is a difficult one compared with that of a few years ago; but in the opinion of the commandant at Hythe, "there are still many battalions in which musketry is looked upon as a sort of fatigue duty to be got over as quickly as possible." It need therefore occasion no surprise that only 12 per cent. were classified as marksmen, and 27 per cent. as first-class shots, but that the second and third classes combined, which correspond to "moderate" and "bad," monopolised 68 per cent.

The shooting of the Royal Engineers and Army Service Corps was indifferent. The report says that the results of the former "are such as to call for serious attention," and all that can be said for the latter is "that the men do their best."

The remarks of the general officers commanding districts are not altogether satisfactory. In the North-Western District the shooting is described as "disappointing, and in no way comes up to what was anticipated on the issue of cordite ammunition"; the number of third-class shots has increased. The range practices of the Guards, in the Home District, were very favourably commented on, and also in other districts.

The most important part of the musketry training—the field firing—is unfavourably reported upon in nearly every district. With the exception of four regiments and sixteen battalions, the practice was executed in one form or another by the whole of the cavalry and infantry serving at home. Those who did not carry it out gave as a reason that suitable ground was not available. For the same reason, in some cases, only squadron or company field firing could be carried out. The reports were generally much fuller than formerly, and touched on the important points. In the case of depôts where the companies are usually weak, it is hoped that in future arrangements may be made by general officers commanding, either for exercising more than one depôt at a time, or for attaching them to a battalion, as no good work can be done by such small bodies as at present are exercised singly. Moreover, the exact words of the regulation directing that all units should be exercised in this practice where ground is available, should be modified in cases where the only ground available is such that fire can only be delivered from the firing points at known distances.

The principal points which call for special comment are as follows:—1. In order to arrive at a fair estimate of the shooting of a unit, it is necessary that the instructions contained in Section 262, Musketry Regulations, 1896 (paragraph 148 (b) of the 1894 edition), should be adhered to. Instances have occurred of a body of infantry, while fully exposed to fire, attacking a force six times its strength. 2. The use of the whistle is not properly understood. 3. Range-finders have in some instances been used at the shortest ranges of the attack. 4. Section commanders in very many instances have been reported as not having named the distance and object at which fire is to be opened: their ideas of control of fire are yet much behind the times. 5. Reports have again been received that "one officer commanded the whole line and gave all words of command." This is the real reason why the commanders of fire units are at a loss how to act when left to themselves. 6. The attack has frequently been commenced with empty magazines, a pause being made at decisive ranges to charge them. 7. The practice was seldom or never rehearsed with blank ammunition, as directed in Section 259, Musketry Regulations, 1896 (paragraph 147, 1894 edition). 8. Three and four minutes' independent firing at within 150 yards of the (supposed) entrenched enemy was still by no means of rare occurrence. From the frequency of the above mistakes, considering how many times they have been commented on by the general officers commanding in their remarks, and also in the Official Report in former years, the only conclusion to be arrived at is that these criticisms do not find their way to the company officers, and that, moreover, the sections of Infantry Drill

and the Musketry Regulations bearing on the subject have not been studied. The Commandant at Hythe suggests that commanding officers should assemble the officers of their units before a rehearsal of field firing takes place, and impress the various points on them; also that officers should be examined frequently as to their duties during the attack and on all other occasions when ball cartridge is used, in the same manner as they are examined in other subjects under Section VII., paragraph 7, Queen's Regulations.

In regard to the Hythe courses, various practices were performed in the presence of the senior officers in order to give them an example of the value of various kinds of rifle fire under, as near as possible, service conditions, and also the effects produced on similar objects by (1) rifle fire delivered by skilled shots, and (2) Maxim guns.

To show the value of infantry fire on infantry advancing and on infantry in view for 10 to 25 seconds, and on a gun team crossing a space of 70 yards at a trot, a special "surprise" target practice was held. It is a very valuable and practical exercise. The various targets appear and disappear for a few seconds at ranges varying from 900 to 230 yards; the height of the figure, head and shoulders only, varying from 2 feet 6 inches at the shorter distances to 1 foot 6 inches at the long ranges. The practice at advancing infantry is most instructive, the target of the height of 5 feet advancing from 450 to 400 yards, and disappearing. The gun team travels across the front rapidly, at a distance of 800 yards. It is not possible to too strongly recommend the construction of such ranges wherever possible. The only ranges of the kind existing are at Hythe and at Pirbright. The latter, which includes a cavalry charge, is that on which the regular troops of the Home District carry out their musketry course.

Another very important feature in the modern musketry course is the regulation by which subaltern officers are obliged to fire a trained soldier's course annually. In the opinion of the authorities, this departure has already caused a vast improvement in the knowledge of the rifle possessed by these officers, and it has resulted in rifle shooting being taken up as a recreation by a considerable number of officers: whereas a few years back such a thing was unknown, except in very rare cases. It must not be overlooked, however, that the Army Rifle Association is responsible to a great extent for the increased interest taken in shooting by officers as a recreation. In the opinion of some of the best authorities on musketry matters, the time has arrived for a further advance to be made in the direction of making it compulsory for all captains in the Army to fire the trained soldier's course annually. Nothing would better conduce to the removal of the present unfortunate indifference with which musketry is treated in the Service, in too many cases. It is devoutly to be hoped that the authorities may be able to see their way to the adoption of this recommendation in the course of the present year.

AUSTRIA-HUNGARY.—The Emperor of Austria has sanctioned the formation of four new infantry companies and the staff of four battalions for Bosnia-Herzegovina. This will take effect on the 1st of October, 1896.—*Militär-Zeitung*, 16. 6. 96.

FRANCE.—In the 12th Corps d'armée, under the active encouragement of General Poilhoüe de Saint-Mars, commanding the army corps, considerable attention is being directed to cycling exercises.

The general has issued on this subject the following order dated 23rd April, to the generals and C.O's of the corps under his command:—

"The soldier's enemy is *weight*, and his highest quality *mobility*. From this twofold point of view the bicycle is a marvellous machine, which realises the ideal. The soldier, carried along on his two wheels of steel, traverses space like a serstient projectile, directing at will, midst all obstacles, his rapid and sinuous

course. His motive power is but the human leg, which seems to have been constructed expressly for the pedal. Orders and information confided to cyclists flutter like airy birds on the chessboard of the battle-field and on all the neighbouring zones, taking no account of distance. But the cyclist is, moreover, a factor to be reckoned with in the conflict. Of a sudden parties of marksmen appear at unexpected points; then disappear as if by enchantment. The covering screens are pierced. The enemy's security is destroyed. His line of communication is utterly upset. The most incredible performances have become easy by these rapid and unexpected appearances. The general commanding the 12th Corps claims the honour of having been the first in 1886 to introduce the use of the bicycle in the Army, by proclaiming already at that time the certain future which awaited this graceful and powerful invention of human ingenuity. During the last ten years, the progress of cycling has been prodigious, and everybody is now agreed as to its application in war, within reasonable limits. In the 12th Corps the latest 'state' gives 219 officers, 328 non-commissioned officers, and over 1,000 men who use and are familiar with the bicycle. This is a satisfactory state of affairs; but we must take the matter still further in hand, to produce all the results of which it is capable. Generals and C.O's should encourage this pastime. They should incite officers to take it up, and should organise races and prizes to stimulate the zeal of the different corps. Lists will be kept regimentally so that it may be ascertained who are the best cyclists. Competitions can be held between regiments, brigades, and between each arm. Practical trials will be made of the cycling resources of the 12th Corps during the next grand manœuvres. A selected detachment of cyclists, under officers of proved ability, will be constituted and attached to each of the 23rd and 24th Infantry Divisions. This organisation will be started immediately, and will prepare itself to demonstrate victoriously its strength and usefulness during the encounter assembly of the 12th and 17th Army Corps. The G.O.C. 12th Corps appeals to the generals and C.O's of the corps to appoint the proper complements of these two detachments to the very best of their ability, and he appoints his chief of the staff to superintend with the very greatest care the details of the necessary preparations (of these detachments), who will be assembled at Limoges during the month of August."—*Spectateur Militaire*, 1. 6. 96, p. 377 *et seq.*; and *Revue Militaire Suisse*, 15. 6. 96.

The 12th and 17th French Corps will carry out army manœuvres under General Cailliot. The remaining army corps will perform divisional and brigade operations. Divisional manœuvres will take place in the 2nd, 6th, 11th, 13th, 15th, and 18th Regions, during not more than sixteen days, which will include the march out and back. In the 1st, 3rd, 4th, and 14th Regions the operations will last not more than fifteen days, including march out and back. In the 5th, 6th, 7th, 8th, and 9th Regions brigade manœuvres will last for not more than fourteen days, march out and back included. The divisional and brigade manœuvres may be interchanged in the 14th and 15th Regions. There will be no fortress manœuvres. Those in Algiers and Tunis will be specially arranged. In the cavalry, the 1st, 2nd, 3rd, 4th, 6th (*bis*), 9th, 10th, 11th, 13th, 14th, 15th, 16th, and 18th Brigades, and the 3rd Chasseur Brigade, will do eight days' brigade exercise, exclusive of march out and back. All the corps cavalry brigades, except the 6th, 7th, and 8th, will take part in the divisional and brigade manœuvres of the infantry in their respective regions. In like manner, brigades belonging to the independent cavalry divisions will take part in these manœuvres. The brigades are as follows:—Of the 2nd Cavalry Division, the 4th Cuirassier Brigade (for the manœuvres in the 1st Region), the 2nd Hussar Brigade (for the manœuvres in the 2nd Region), and the 5th Dragoon Brigade (for the manœuvres in the 6th Region); of the 6th Cavalry Division, the 5th Cuirassier Brigade (for the manœuvres in the 7th Region); the 1st Hussar Brigade (for the manœuvres in the 7th Region), and the 6th Dragoon Brigade (for

the manoeuvres in the 13th Region); and of the 7th Cavalry Division, the 3rd Chasseur Brigade (for the manoeuvres in the 8th Region). Combined cavalry operations will be held by the 1st, 3rd, and 7th Cavalry Divisions (in the last-named of which the 3rd Chasseur Brigade will be relieved by the 5th Cavalry Brigade), under the command of the General of Division who presides over the Cavalry Technical Committee. They will last, at most, twelve days, exclusive of march out and back.

The 4th Cavalry Division is provisional, and will be commanded by the Inspector of the 3rd District of Permanent Cavalry Inspection. It will be composed of the 6th, 7th, and 8th Cavalry Brigades, with two horse artillery batteries not yet selected. It will carry out combined manoeuvres of, at most, twelve days' duration, exclusive of march out and back.

All the Territorial Regiments and Territorial Chasseur Battalions called out in October will manoeuvre for two days after the close of their training period, in the vicinity of their garrisons.—*Deutsche Heeres-Zeitung*, 13. 6. 96.

On the 1st of January, 1894, there were 2,678 stallions belonging to the State, and used for breeding purposes. Of these 195 were English thoroughbreds, 97 Arab thoroughbreds, 207 English-Arab thoroughbreds, 1,806 halfbreds, and 373 draught horses. During the year the number was diminished by 270, of which 43 died and 227 were cast. To make up this loss and to provide for the intended increase of 50, the stud authorities took over 323 fresh stallions. Of these, 9 came from the State stud of Pompadour, 2 of them being Arab, and 5 English-Arab thoroughbreds, and 2 being halfbreds; 314 were bought in France or England, of which 32 were English thoroughbreds, 4 Arab thoroughbreds, 16 English-Arab thoroughbreds, 214 halfbreds, and 48 draught horses. There were consequently, on the 31st of December, 1894, 517 thoroughbred, 1,827 halfbred, and 387 draught stallions. Among the thoroughbreds were 213 English, 93 Arabs, and 211 English-Arabs.

There were in the State stud of Pompadour, on the 1st of January, 1894, 59 brood mares. The number was increased during the year by two, but one died, so that there were 60 at the end of the year. There were 77 foals at the beginning of the year, and 42 more in the course of the year, but the loss from death and other causes was 37, so that 82 remained. The number of mares covered by 2,636 stallions was 140,045, being 7,674 of an increase over the previous year. The number of foals is, unfortunately, not given, the only remark being that the receipts thereby accruing to the State amounted to 1,014,920 francs.—*Militär-Wochenblatt*, 16. 6. 96.

GERMANY.—The rejuvenation of the cadres (to which reference has already been made) has had certain consequences, easily discoverable in the German year-books. One of the German military papers, in dealing with the recently-published Prusso-Würtemberg Year-book for 1896, remarked as follows:—It is well known that the "cross of distinction" is given to officers who have completed 25 years of military service. Now, the 132 regiments of Prussian infantry, which last year had 230 captains decorated with this cross, have this year only 151, the average being little more than 1 captain of 25 years' service per regiment. The Infantry of the Guard has not a single captain decorated with this cross, 36 infantry regiments are in the same case, 39 have 1, 38 have 2, 8 have 3, and 3 have 4 decorated captains.

The "iron cross" which was granted for the war of 1870-71 is no longer worn by any captain of the Infantry of the Guard, and in the other infantry regiments there are not more than 50 captains altogether in possession of this decoration. The following are the retirements for the year:—5 generals of army corps, 9 lieutenant-generals, 29 major-generals, 41 colonels, 20 lieutenant-colonels, 140 majors, 137 captains, 81 first lieutenants, and 183 second lieutenants. These retirements

should be more properly called transfers to the Reserve, many of the officers being sufficiently young to serve for a long time in the latter force.

The Bavarian Army has not followed the Prussian example in the matter of rejuvenation. The officers consequently find themselves at a disadvantage with regard to relative age. Formerly an officer became a colonel between the ages of 44 and 48, but now he hardly reaches the rank of lieutenant-colonel at 48, and the lower grades are, of course, likewise affected by this stagnation. The last promotion of Bavarian officers at the top of their respective lists was:—Lieut.-generals, May, 1890; major-generals, 1892; colonels, November, 1891; lieutenant-colonels, June, 1893; majors, July, 1891; infantry captains, February, 1889; cavalry captains, December, 1888; and artillery captains, April, 1888.—*Revue du Cercle Militaire*, 6. 6. 96.

The following is a Russian view of the German Army as it now appears:—The number of recruits necessarily called out, owing to their remaining now only two years with the colours, bears such a great proportion to the population, that not more than 90,000 or 100,000 men are exempt from active military service (while in Russia the number is nearly half-a-million), and so Germany may truly be called a nation in arms.

There is in Germany a very close connection between the people and the Army, from the territorial basis on which recruiting is carried out. The village populations take a great interest in the soldiers' life, and the men, after their release from the first line, keep up a constant connection with their regiments.

The recruits come in, almost all, in the course of four or five days, at the beginning of October; much earlier than in Russia, where this takes place from December to January. The swearing-in of the recruits is a very solemn function, especially in the Guards, where it is done in the presence of the Emperor.

The training of the troops during the two years' period of service seems to be quite successful. Their education in the spirit of discipline may be difficult, but it is facilitated by the military instincts of the people. How far this will continue to be so, can only be judged by results. In contrast to Russian arrangements, the concentration of men in barracks, the good general education of the recruits, the manner in which their treatment is regulated, the small amount of guard duty, and the infrequency of holidays, are all in their favour. More time can thus be spent in practical soldiering.

German Troops are not quartered, as in Russia, by sections, but in a number of separate rooms, less spacious than ours and therefore never used for drill. The pay of the German soldier is, on an average, 3 roubles 30 copeks monthly, while that of ours is only 22½ copeks. The German Army is also incomparably better clothed. The men have four or more suits, and great care is taken of them. Those who get leave out of barracks are always very well, one may almost say elegantly, dressed; but after they return to their homes, their clothing is no better than that of the Russians.

Soldiers in Germany receive considerably less bread than they do in Russia (3 lbs. daily), and they do not eat out of common dishes, but each has his own plate. The victuals are good, and are accurately regulated with regard to their nourishing properties, but they do not appeal to Russian taste. The German food is not solid enough for our soldiers; they require to have more in their stomachs. Therefore, our men have more endurance and more physical power than Germans. (This statement is queried by the German editor.)

Soldiers receive passes to the town much more frequently than with us. In the streets they salute their superiors with the most exact precision, and show that they are proud of their calling. The discipline is strict, but it is of a more subjective character, directing the intelligence and causing implicit obedience of orders, while its outward forms are materially milder than they formerly were. A comparison may be drawn thus:—The Turk fights with the courage of

fanaticism; the Russian does his duty by virtue of self-sacrificing sentiments, which are founded on his steadfast faith in God, and his love to the Czar and the Fatherland; the German soldier promptly obeys all the commands of his superiors, because he has, from childhood, been accustomed to discipline, and it has become his second nature.—*Militär-Wochenblatt*, June, 1896.

On the 6th June the Commission of the Budget adopted the Government project relating to the 4th Battalions. The resolution proposed by Herr Richter, the Radical leader, calling upon the Government to introduce the present two years' system of military service into the Imperial Constitution, was rejected by the Commission in view of the explanations given by General Bronsart von Schellendorf, Minister of War, to the effect that the Government had no intention of modifying the two years' system before 1899, in which year it would probably be extended to 1905. On the whole the system had worked satisfactorily, and two-thirds of the military authorities were in favour of its maintenance. It is noteworthy that immediately after the adoption of the project by the Commission the Minister of War published in the *Imperial Gazette* a modification of some declarations "erroneously" stated to have been made by him during a previous sitting. The declarations in question related to the much-desired reform of procedure in the military courts. According to the *Imperial Gazette*, the Minister of War can now do no more than "share the distinct hope entertained by the Imperial Chancellor" that a project of reform would be submitted to the Reichstag next autumn.—*Times*, 8. 6. 96.

The German Army will in future, under the Statute, consist of 624 battalions of infantry, 465 squadrons of cavalry, 494 batteries of field artillery, 37 battalions of foot artillery, 236 pioneer battalions, 7 railway battalions, and 21 train battalions. The Kaiser-Manœuvres are to take place between Görlitz and Bautzen, from the 8th to the 12th of September. The four divisions of the 5th and 6th Corps will be commanded by Count Waldersee, who will fix his headquarters at the village of Hochkirch, famed for Frederick the Great's disastrous defeat on October 14th, 1758. He will operate against the 12th, or Saxon, Corps, consisting of three divisions, and one division of the 4th Corps, under Prince George of Saxony. In contrast to the method pursued last year, the two armies will, by the Emperor's special orders, retain their commanders-in-chief and staffs unchanged throughout the manœuvres. There will not be many visits or festivities, in order that the time may be devoted exclusively to the business in hand.—*Reichsanzeiger*, July, 1896.

NAVAL AND MILITARY CALENDAR.

JUNE, 1896.

- 2nd (Tu). Major-General Sir F. Carrington, commanding operations in Matabeleland, arrived at Buluwayo.
- 4th (Th). Salisbury Column arrived at Buluwayo.
- 5th (F). First day of trial by Court-martial of General Baratieri, late Italian Commander-in-Chief in Abyssinia.
- 6th (Sat). Lieut.-Colonel Beal's and Colonel Spreckley's Columns routed a Matabili impi, near the Gwelo Road. British loss, 3 killed.
- „ „ Garrisons of Voukolics and Semprona in Crete relieved by Turkish troops.
- 7th (S). Egyptian troops, under the Sirdar, surprised and captured Dervish camp at Firket, with stores, provisions, and 450 prisoners. Egyptian loss, 20 killed, 80 wounded. Enemy pursued by mounted troops under Major J. F. Burn-Murdoch, 1st Dragoons.
- „ „ Matabili defeated two miles from Fonseca's Farm, by Captain Macfarlane's column.

- 8th (M). Capture of Dervish camp at Suarda, with prisoners, boats, etc., by Major Burn-Murdoch, 1st Dragoons, and mounted troops Egyptian Army.
- 9th (Tu). Revolt of natives in Mashonaland.
- 10th (W). Fatal boiler explosion on board French first-class battle-ship "Jauréguiberry," while on trial trip.
- 12th (F). Launch of first-class cruiser "D'Entrecasteaux" at La Seyne, Toulon, for the French Government.
- 14th (S). General Baratieri, late commanding Italian troops in Abyssinia, acquitted by Court-martial.
- 15th (M). Arrest by Venezuelans of Mr. Harrison, the British official in charge of labourers making road from Barama to the Cayani.
- 19th (F). Third-class cruiser "Tourmaline" paid off at Sheernees.
- 20th (Sat). Launch of torpedo-boat-destroyer "Guardia Marina Riquelme" from Messrs. Laird's works at Birkenhead, for the Chilean Government.
- " " Successful reconnaissance to Kedden, three-quarters way Wady Halfa to Dongola, by Captain B. T. Mahon, 8th Hussars.
- 21st (S). Gallant rescue of women and children in the Mazoe District, in an armoured mule wagon, by a small Patrol of 23 men, of whom 11 were killed and wounded and 14 horses and all mules killed.
- 22nd (M). Detachment of Natal contingent successfully encounter Mashonas on the Upper Umfuli, near the Beatrice Mine. British loss, 6 killed, wounded and missing.
- " " Egyptian telegraph completed to Suarda.
- " " Presentation of new colours to Chatham Division R.M.L.I., by H.R.H. the Duke of Saxe-Coburg-Gotha, Admiral of the Fleet, and Hon. Colonel of the corps.
- " " Detachment 7th Hussars, first portion of Imperial troops, left Mafeking for the front.
- 24th (W). Fatal boiler explosion on board first-class cruiser "Blake," while running full-speed trial.
- 25th (Th). Mounted Infantry, Imperial force, left Mafeking for the front.
- " " Captain Laing's column defeat large body of Matabili on the Belingwi range. British loss, 7 killed and wounded.
- " " Rescue of the Jesuit fathers at their farm, 15 miles from Salisbury, by Captain Taylor's patrol.
- 27th (Sat). Launch of second-class cruiser "Isis" at Govan, from the London and Glasgow Engineering Company's works.
- " " First-class cruiser "Endymion" paid off at Chatham.
- 30th (Tu). Third-class cruiser "Barham" paid off at Portsmouth.

FOREIGN PERIODICALS.

NAVAL.

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens*. No. 7. Pola and Vienna: July, 1896.—“On the Solution of Nautical-Astronomical Problems.” “The Clouthier Diving Apparatus.” “The Cost of English Battle-ships.” “The French Naval Estimates for 1897.” “Foreign Navies: England.” “Foreign Naval Notes.” “Book Notices.”

DENMARK.—*Tidskrift for Søvæsen*. No. 3. Copenhagen, 1896.—“Water-tube Boilers for use in Ships.” “On the Electric Lighting of Ships.”

FRANCE.—*Revue Maritime*. Paris: June, 1896.—“Armour-plates and Artillery in April, 1896.” “Seamen’s Maladies and Naval Epidemics” (*continued*). “Influence of Sea-Power upon History—1660-1783” (*continued*). “Strategical Employment of Torpedo-boats.” “Disposition of Artillery on board Ships-of-War.” “Maritime Forces of the European Powers.” “Foreign Naval Chronicle.” “The Maritime Fisheries.”

La Marine Française. Paris: 10th June, 1896.—“Some Opinions on the Composition and Command of our Squadrons.” “The Ruelle Factories and the Construction of Naval Guns” (*continued*). “The Correspondence of Admiral Courbet.” “Home and Foreign Naval Notes.” “Mercantile Marine Notes.” 25th June.—“Our Naval Boilers; à propos of the accident on board the ‘Jauréguiberry.’” “The Ruelle Factories and the Construction of Naval Guns” (*continued*). “The Colonial Army.” “Home and Foreign Naval Notes.” “Mercantile Marine Notes.”

Le Yacht. Paris: 6th June, 1896.—“Meeting of the Maritime Technical Association: Lecture—Observations on the Characteristics of Aluminium, displayed in the different uses made of it for Naval Construction.” “Yachting Notes and News” (with plans). “The New Cadres’ Regulations.” “The United States Submarine-boat ‘Holland.’” 13th June.—“The School of Gunnery.” “Yachting Notes and News” (with plans). “The Trials of and the Accident on board the ‘Jauréguiberry.’” (with photographs of the ship). 20th June.—“Petroleum Fuel.” “Yachting Notes and News” (with plans and photographs of the German Emperor’s new yacht “Meteor”). “The Boiler Accident on board the ‘Jauréguiberry.’” 27th June.—“The Law Relating to the Maritime Inscription.” “Yachting Notes and News” (with photograph). “Launch of the ‘D’Entrecasteaux,’” (instantaneous photograph).

Le Moniteur de la Flotte. Paris: 7th June, 1896.—“Questions relating to the Personnel.” “The New Cadres’ Regulations.” “The Navy in Parliament.” “Colonial Notes.” 13th June.—“The Grade of Corvette-Captain.” “The Parliamentary Commission on the Navy.” “Madagascar.” 20th June.—“The Colonial Army.” “The Parliamentary Commission on the Navy.” 27th June.—“Speed and Endurance.” “The Nile Flotilla.” “The Navy in Parliament.” “New Constructions for the Navy.” “The Loss of the ‘Drummond Castle.’”

GERMANY.—*Marine Rundschau*. Berlin: July, 1896.—“Battle-ships in Action.” “Proposals for a System of Harbour Defence” (with sketches). “The Kiel Exhibition.” “Précis of the Report on the Protection of the North-Sea Fisheries.” “Trials of the ‘Kaiserin-Augusta’” (with instantaneous photograph). “The Battle of Trafalgar from a Spanish source” (*concluded*). “Foreign Naval Notes.” “Notices of Books.”

ITALY.—*Rivista Marittima*. Rome: June, 1896.—“The Ships of the Romans discovered in Lake Nemi.” “Notes on the Employment of Torpedo-Boats.”

"Colonial Militia." "Yachting" (*concluded*). "Port Pisano." Letters to the Director :—"Strategical Employment of Torpedo-Boats"; "Combustion Measurers for Marine Boilers." "Foreign Naval Notices" (with photographs of French battle-ships "Carnot" and "Jauréguiberry"). Mercantile Notes :—"The Italian mail-boat 'Regina Margherita'"; "Customs Tariff in Australia"; "New Tonnage Laws in the United States." "Notices of Books." Supplement :—"The Naval Organisations of the Principal Nations—England."

L'Osservatore Navale. Palermo: June, 1896.—"Provisions in favour of the Mercantile Marine." "The Marines of the Guard—1803-1815" (*Revue Maritime et Coloniale*, September, 1895). "Air in the Water of Steam Generators." "Home and Foreign Naval Notes" (with photograph of battle-ship "Sicilia"). Miscellaneous Notes :—"The submarine-boat 'Svanen'"; "On Nausen"; "The Regatta at Genoa"; "Treaty of Tananarivo." "Notices of Books."

SPAIN.—*Revista General de Marina.* Madrid: June, 1896.—"Relative Proportion of Ships in a Fleet." "Telemetres." "The Cost of the French and German Navies." "The Navy in Parliament in France and Germany." "The Speed of Steam-ships." "Application of Electricity to Ships-of-War." "The Superior School for the Navy in France." "Notices of Books."

SWEDEN.—*Tidskrift i Sjöväsendet.* No. 3. Stockholm: 1896.—"The United States Navy." "Typhoons in the China Seas." "The Torpedo-boat 'Comet.'"

MILITARY.

AUSTRIA-HUNGARY.—*Militär-Zeitung.* Vienna: 8th June, 1896.—"The Speech from the Throne." "The Army Estimates for 1897." "An Improvement in the Food of the Army." "The Proposal for reducing the Italian Army rejected." "Winter Firing-practice of the Russian Artillery." 16th June.—"From the Delegations." "The Acquittal of General Baratieri." "The Millennium Races and Prizes at Buda-Pest." 24th June.—"The 13th and 14th Sections of the Instructions for the Maintenance of the Army, Part I." "The Imperial Minister of War and the Army Budget."

Mittheilungen über Gegenstände des Artillerie- und Genie-Wesens. Nos. 5-6. Vienna: June, 1896.—"On the Question of the Future Infantry Weapon." "Arrangement for laying Guns in Covered Positions." "Shooting Regulations for the French Field Artillery." "Foreign Military Notes."

Organ der Militär-Wissenschaftlichen Vereine. No. 5. Vienna: May, 1896.—"Prince Eugene and the Siebenbürgen Principality." "Suvorof's March through Switzerland" (with map). "Book Notices."

FRANCE.—*Revue de Cavalerie.* Paris: June, 1895.—"Our Grand Manœuvres." "From Lützen to Bautzen." "Cavalry against Cavalry." "The Cost of Remounts." "A Raid in Siberia."

Revue d'Artillerie. Paris: June, 1896.—"The Field Artillery of the Future." "The Matériel of the German Field Artillery."

Revue du Génie Militaire. Paris: June, 1896.—"Practical Remarks on the Properties of Iron and Steel." "Fortifications, etc." "Bivouac." "Construction, etc."

Le Spectateur Militaire. Paris: 15th June, 1896.—"The Russian Army." "The Mounted Infantry of the Future." "Decorations."

Journal des Sciences Militaires. Paris: June, 1896.—"The Strategy of the Battle-field" (*conclusion*). "Guerre et Paix," by Tolstoi; discussed by General Dragomiroff (*continued*). "Artillery Fighting Tactics." "The Question of Reserve Cadres."

Revue Militaire de l'Étranger. Paris: June, 1896.—"The German War Budget for the Exercises of 1896-97." "The Present Trend of the Training of

the German Infantry." "The Italians in Africa." "The March of Russian Troops to the Far East in 1895."

Revue du Cercle Militaire. Paris: 6th June. — "The Italian Army and projected reforms." "Practical instruction in Artillery in France and Germany." 13th June. — "The Italians in Erythrea, and the charge against General Baratieri." "A new Ambulance on wheels." "Naval armaments at the Battle of Yalu." 20th June. — "The Indian Army." "The question of the 4th Battalions in the German Reichstag." "Chinese and Japanese Soldiers." 27th June. — "The Italians in Erythrea: the Court-martial on General Baratieri and its result." "The question of the 4th Battalions in Germany" (*concluded*).

GERMANY.—*Neue Militärische Blätter.* Berlin: June, 1896. — "On the Neglect of Military Transport Roads." "Cuba, 1889-96." "The Monroe Doctrine and the Military Future of the United States." "Delagoa Bay and its importance." "On Injuries to Army horses from ill-fitting saddlery, etc." "Book Notices."

Militär-Wochenblatt. Berlin: 3rd June, 1896. — "Five and Twenty Years Ago." "Gustav Steinbrecht and Equitation." 6th June. — "Festival of the Volunteer Nurses of the War of 1870-71." "Gustav Steinbrecht" (*conclusion*). 10th June. — "Tactical Rides." "French Observations on the German Cavalry." 13th June. — "Archduke Charles of Austria." 17th June. — "The Capitulation of Vitry, 1870." "Archduke Charles of Austria" (*continued*). "A Little British Mobilisation." 18th June. — "Ideas on the Training of Artillery Horses for Heavy Draught." 20th June. — "Archduke Charles of Austria" (*concluded*). "New Clothing Regulations." 24th June. — "History of Military Education in Prussia." "The Fortification of Nancy." 27th June. — "German South-West Africa." "History of Military Education in Prussia" (*continued*).

Jahrbücher für die deutsche Armee und Marine. Berlin: June, 1896. — "The Battles of the German Army on their forward march in August, 1870; particular attention being given to French sources and personal reminiscences" (*concluded*). "English estimate of last year's Kaiser-Manceuvres." "The French strategical network of Railways." "Soldier's Life in the Thirty-Years' War." "Military News from Russia." "Military Notes." "Book Notices."

Internationale Revue über die Gesammten Armeen und Flotten. Dresden: July, 1896. — "The Test of the 'Iowa' Armour-Plate at Indian Head in September, 1895, and the experiments with Krupp 3.5-inch and 4-inch Armour plates at Meppen in October, 1895." (with photographs). "The use of Cartridges and a Substitute for them." "The first Five and Twenty Years of the German Navy." "The English Army and Navy." "The Organisation of the Forest and Customs Officials in France." "The Practice of Duelling, and Public Opinion in France." "The Most Important Designs of Small-arms in all Countries." "Events in East Asia." "The Anglo-Egyptian Sudan undertaking."

Deutsche Heeres-Zeitung. Berlin: 3rd June, 1896. — "The Dutch in Atchin." "Portable Bicycles for War Purposes" (*continued*). 6th June. — "Observations on March-Hygiene." "Portable Bicycles for War Purposes" (*concluded*). 10th June. — "The Jubilee of the Great War in Germany and France." 13th June. — "Military Telephoning." "The 'Volskrieg' on the Loire in the Autumn of 1870." 17th June. — "The Difficulties of the Occupation of Madagascar." "Remarks on the Teaching of Fortification." 20th June. — "The Duelling Question and the Army." "Remarks on the Teaching of Fortification" (*continued*). 24th June. — "The Evacuation and the Medical Corps in Japan." "Remarks on the Teaching of Fortification" (*concluded*). 27th June. — "The Rejuvenating of the Officers of the French Army." "What ought to be demanded in Drill Regulations, and what ought not to be expected in them."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: May, 1896. — "Further Discussion on a Contribution to the Rational Solution of the Ballistic Problem." "The Engineer Corps in Africa." "Method of Calculating the Trajectory of

Projectiles." "General Wille's Portable Automatic Fire-arms." "The New Battle Regulations for the Field Artillery of Germany and Austria" (*continued*). "Miscellaneous Notes." "Foreign Military Notes."

RUSSIA.—*Voïénnii Sbornik*. St. Petersburg: May, 1896.—"Sketch of the Rising of the Mountaineers of the Terek District in 1887" (*continued*). "What is the real significance of the Independence of a Commander in War?" "On the Subject of the Article: Operations of the Russian Cavalry in the Trans-Caucasus in 1877-78." "Sketch of the Regulations for Musketry Instruction in the Infantry" (*concluded*). "Action of the Supports of Artillery in Action." "The Pursuit to Karakouldja by the detachment of Irregular Chasseurs of the 20th Turkestan Battalion." "The Quarters of the Russian Army" (*continued*). June, 1896.—"Sketch of the Rising of the Mountaineers of the Terek District in 1887" (*continued*). "On the Subject of the Preceding Article." "Questions of Strategy." "What is the real significance of the Independence of a Commander in War?" (*continued*). "The Moral Element at Sebastopol" (*continued*). "Operations of the Advance Guard of General Gurko in the War of 1877-78" (*continued*). "Questions relative to the Feeding of Troops in War-time in Western European Armies." "The Quarters of the Russian Army" (*concluded*).

SPAIN.—*Memorial de Ingenieros del Ejército*. No. 5. Madrid: May, 1896.—"Some Account of the work performed by the Military Engineers in the Philippine Islands." "Transport Material for the Units of the Railway Battalion" (with plates, *continued*). "Extemporised Bridges and the Pfund Method of Support." "The Röntgen Rays." "Military and Scientific Notes." No. 6. June, 1896.—"Transport Material for the Units of the Railway Battalion" (*concluded*). "The Mangin Apparatus Modified for the Secret Transmission of Despatches." "Automobile Torpedoes." "Central Electrical Stations." "Military and Scientific Notes."

Revista Técnica de Infantería y Caballería. Madrid: 1st June, 1896.—"Swiss Military Institutions" (*continued*). "Some Points in the History of the Military Institutions of the United States" (*continued*). "Ancient Accounts of the Art of War." "The Wars in the Low Countries." "Episodes in the Cuban Insurrection" (*continued*). 15th June.—"Swiss Military Institutions" (*concluded*). "Wars of the Low Countries" (*concluded*). "New Army Regulations." "The Command of our Armies during the Austrian Rule." "Episodes in the Cuban Insurrection" (*concluded*). "The Army in the Philippines." "Mindanao: New Military Territorial Division."

SWITZERLAND.—*Revue Militaire Suisse*. Lausanne: 15th June, 1896.—"The Strategic Deployment of the French Forces on their Eastern Frontier" (*continued*). "Defence of Switzerland by Inundation." "Cyclists in France." "Manœuvres of the 1st Army Corps in 1895" (*continued*).

UNITED STATES.—*Journal of the U.S. Artillery*. Fort Monroe, Virginia: May-June, 1896.—"Vertical Fire on Sea-Coast Batteries." "Experimental Determination of the motion of projectiles inside the bore of a gun, with the polarising photo-chronograph." "The resistance of air to the motion of projectiles." "Resistance of the air for great velocities of projectiles." "Sea-coast Defences and the Organisation of our Sea-coast Artillery forces." "Range Tables for the 12-inch cast-iron B. L. Mortar."

The United Service. Philadelphia: June, 1896.—"Reminiscences of Napoleon Bonaparte at St. Helena." "What our Cavalry in Mexico did, and did not do." "The story of a Volunteer." "Bacon and Shakespere." "Earth's centre of gravity."

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